A STUDY ON
AZHAL KEEL VAAYU
(Osteoarthritis)

Dissertation Submitted To

THE TAMIL NADU Dr. M.G.R. Medical University

Chennai – 32

For the Partial fulfillment for the Award of Degree of

DOCTOR OF MEDICINE (SIDDHA)

(Branch – III, SIRAPPU MARUTHUVAM)

DEPARTMENT OF SIRAPPU MARUTHUVAM

Government Siddha Medical College

Palayamkottai – 627 002.

APRIL – 2013

ACKNOWLEDGEMENT

First, I am extremely grateful to the divine power enlightened my path with blessings and strengthened me in all aspects towards the milestone successfully.

I express my deep sense of gratitude to our Principal **Dr.N.Chandra Mohan Doss. M.D(S).,** and **Dr.S.Soundararajan. M.D(S).,** Vice Principal, Government Siddha Medical College, Palayamkottai for granding permission to execute this dissertation work in the college premises.

It is a honour for me to express my sincere thanks and gratitude to Asso. Prof. **Dr.S.Kaniraja. M.D(s).,** Head of the department, Post Graduate Sirappu Maruthuvam for his support and guidance to do this study.

It is my pleasure to express grateful thanks to **Dr.D.Rajasekar. M.D(S).,** lecturer and **Dr.A.S. Poongodi Kanthimathi. M.D(S).,** Lecturer Post Graduate Sirappu Maruthuvam for rendering their valuable suggestion and guidance.

I convey my sincere thanks to **Dr.S.Ramaguru. B.Sc., M.B.B.S., M.S(ortho)., D.Ortho.,** Professor, Department of Orthopaedics, Department of Sirappu Maruthuvam, Govt Siddha Medical College, Palayamkottai.

My sincere thanks to Prof. **N. Nagaprema. M.Sc.,** Head of the department, Department of Bio-chemistry and **Mr. M. Kalaivanan. M.Sc.,** Lecturer, Department of Pharmacology, Government Siddha Medical College, Palayamkottai.

It is my duty to express my cheerful thanks to all those who encouraged and supported during the whole study period.

CONTENTS

INTRODUCTION

Prevention and cure are the basic aims of all system of medicine where as the siddha system has in addition the transcendental motivation called the immortality of the body. The basic emphasis of siddha system is on positive health i.e to prevent diseases, by careful dieting and proper relaxation of the mind to acheive a totality of health that assure only longivity but also immortality. The drug of the siddha system of medicine may be broadly classified into herbals, metal and mineral catogories.

In siddha medicine the physiological function in the human system is mediated by three substances (i) vatham (ii) pitham (iii) kapham. Which are made up of the five elements (i) Mann (ii) Neer (iii) Thee (iv) Vayu and (v) Agayam.

In the human body the nervous actions which constitude movements, activity sensation etc. are due to vatham, the metabolic activity etc. are functions of pitham and stability is controlled by kapham.

If these three thathu function normally, normal health is maintained. The normal order of vatham, pitham and kapham are in the proportion of 1: ½ : ¼ respectively. Any change in these proportions will lead to disease.

The post graduate sirappu maruthuvam is a specialized branch in our system. It consists of varmam, Thokkanam, ottradam, yoga and kaya kalpam mainly the vadha disease are treated by thokanam and ottradam.

In India, approximately 68% of the population is affected by **"Azhal keel vayu"** and is more common in post menopausal women.

It mostly affects the elderly people above 40 years of age. It produces more pain and discomfort in elder people.

AIM AND OBJECTIVES

AIM:

To evaluate the therapeutic efficacy of siddha formulation "SAGALA VADHA CHOORANAM" (INTERNAL), "ILAGU VADHA KESARI THYLAM" (EXTERNAL) in "AZHAL KEEL VAYU" (Osteo arthritis of knee joint) for the reduction of pain and swelling and to improve the range of movements.

OBJECTIVES:

1. To study the clinical cause of the disease Azhal keel vayu with keen observation on the definition, Aetiology, pathology, Diagnosis, prognosis, complications and the treatment by making use of siddha aspects.
2. To have an idea about the prevalence of Azhal keel vayu with reference of Age, sex, family history, occupation, socio ecnomic status, diet, habit and climatic conditions.
3. To know the correlation of aetiology, classification, symptoms, diagnosis and line of treatment compared with osteo arthritis of knee.
4. To perform the alteration of the disease under the topics of Mukkutram, Uyir thathukal, Porigal, Udal thathukal, Envagai thervugal, Naadi, Neerkuri, Neikuri.

5. To make a clinical trial of patients with the trial medicine SAGALA VADHA CHOORANAM (Internal), ILAGU VADHA KESARI THYLAM (External) in the treatment of Azhal keel vayu.
6. To use of modern parameters in the investigation of X-ray to confirm the diagnosis and to follow the progression of patients.
7. To elicit the Biochemical analysis and Pharmacological action of the trial medicine.
8. To insist Thokkanam, Ottradam, Asanam exercise along with medicine to acheive the good results, which are the salient features of Sirappu Maruthuvam.

REVIEW OF LITERATURE

SIDDHA ASPECT

In siddha system the disease are due to the variation of thrithathu namely vatham, pitham, kapham. Thiruvaluvar says,

"மிகினும் குறையினும் நோய் செய்யும் நூலோர்

வளி முதலா எண்ணிய மூன்று"

Vatham , pitham, kapham are called thirithathu in normal condition regulate all physiological activities of the human body.

When these thirithathu are disturbed and they produce disease.

கீல் வாயு

In yugi vaidhya sinthamani vadha diseases are classified into 80 types.

According to Agasthiyar guna vagadam "keel vayu" comes under the 80 types of vatha disease.

"தானாக கீல்வாத ரோகம் பேரை

நோய் தனக்கு பாகியாய் வாதரோக மென்பார்

நுட்பமுள்ள வாதரோக மெண்பதுந் தான்

ஆய்ந்தெடுத்து இதற்குள்ளே அடக்கம் பாரு"

அகத்தியர் குணவாகடம்

"Keel vayu" is further divided into 10 types in the text siddha maruthuvam according to Saba pathy manucscript.

Azhal keel vayu fall in this 10 sub divisions of keel vayu.

"Keel vayu" is the general term that includes all kind of joint diseases. In **T.V. Sambasivam Pillai Dictionary** "Keel vayu" means அழற்சியினால் பொருத்துகளில் வலியையும் வீக்கத்தையும் உண்டாக்கும் நோய். Painful inflammation with swelling affecting the muscles and joints of the human body.

In **Yugi Vaidhya Sinthamani** it is mentioned as santhu vadham. In **Therayar vagadam** it is mentioned as muzhangal vatham, according to affect of joints. In **Yakobu Vaidhya Sinthamani** it is mentioned as mudakku vatha soolai. In **Thanvanthiri Vaidhya Kaviyam** it is said as mudakku vatham.

In **Therayar Vagadam** vatham classified into 81 types. **Keel vayu** comes under the classification of 81 types of vatham.

வாதம்:

இருப்பிடம்:

வளிமுதலா யெண்ணியமுக் குற்ற மெல்லாம்
வாழ்வதெனும் தேகமுற்றும் பம்பிபரந்து
தெளிவுறச் சாற்றும் நாபிக் குக்கீழ் வாதம்

மருத்துவ தனிப்பாடல்

பொருள்:

வாதம் முதலாக எண்ணப்பட்ட முக்குற்றங்கள் உடல் முற்றும் பரவி வாழ்பவை எனினும் வளி கொப்புழுக்கு கீழ் உள்ளது.

"நெளிந்திட்ட வாதமபா னத்தைப் பற்றி

நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று

குளிந்திட்ட மூலமது டெழுந்து காமக்

கொடியிடையைப் பற்றியெழுங் குணத்தைப் பாரே

குணமான வெலும்பைமேற் றொக்கை நாடி

நிணமான பொருத்திடமும் ரோமக் காலும்

நிறைவாகி மாங்கிசமெல் லாம்பரந்து

கால்காட்டி வாதமெங்குங் கலக்குந் தானே"

- தமிழ் மருத்துவ வயித்திய சதகம்.

பொருள்:

வளியானது, அபானன், மலம், இடகலை, சந்தியின் கீழ் மூலம், காமக்கொடி, இடுப்பு, எலும்பு, தோல் நரம்புக் கூட்டம், கீல்கள், மயிர்க்கால், ஊண் என்னும் இடங்களில் வாழ்வதாகும்.

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்

நாபிக்குக் கீழென்று நவில லாகும்" *-யூகி முனி*

பொருள்

மலமும், நாபிக்கு கீழிடமும் வாதமிருக்கும் இடங்கள் ஆகும்.

"அறிந்திடும் வாத மடங்கு மலத்தினால்"

வாதம் மலத்தில் அடங்கும் என **திருமூலர்** கூறியுள்ளார்.

வாதம் பொதுக்குணம்:

"வளியின் பண்பு நெகிழ்ச்சி பரவல்

வறட்சி விரைதல் தட்பம் நுட்பம்"

- மருத்துவ தனிப்பாடல்

பொருள்

வாதத்தின் குணங்கள் நெகிழ்ச்சி, பரவுதல், வறட்சி விரைவாக இடம்விட்டு இடம் போதல் தண்ணென்றிருத்தல் நுண்ணியதாய் இருத்தல் என்பனவாகும்.

வாத நோய்களின் இயல்பு

வாதவீறு அன்ன மிறங்காது கடுப்புண்டாகும் வண்ண முண்டாகும்

மோது கட்டுரோகம் சுரமுண்டா மிருமலுமா முறங்கா தென்றும்

ஓது சூரிய வாதமனலோடு நடுக்கமுண்டாம் பொருள் களாய்த்

தீ தெனவே நரம்பிசித்து சந்துகள் தோறுங் கடுக்குந் தினமுந் தினே

- தேரையர் வாகடம்

பொருள்

வாதவீறுள்ள போது உணவு செல்லாது, உடலில் கடுப்பு உண்டாகும். உடல் நிறம் ஏற்படும், சுரமும் இருமலும் உண்டாகும். உறக்கம் கொள்ளாது. வாத நோயில் உடல் அனல் போல் காயும். நடுக்கம் காணும், நரம்பிசிவு காணும் என்பின் மூட்கெளில் வலி காணும்.

வாதம் அதிகரித்ததின் குறிகுணம்:

"மேவிய வாதஞ்செய்யுங் குணந்தனை விளம்பக் கேளாய்

தாவிய வயிறுமந்தஞ் சந்துகால் பொருத்து நோவாந்

சேவிய தாதுநாசஞ் சேர்த்துநீர்க் கடுத்து வீழும்

ஆதியானுரைத்த பான்மை வேதமாமே"

தன்வந்திரி வைத்தியம்

பொருள்:

வாதம் அதிகமானால், வயிறு மந்தம், சந்து, கால் பொருத்து நோவு, தாதுநாசம், நீர்கடுப்பு ஆகிய குறிகுணம் உண்டாகும்.

வாதம் மிகுதியால் வரும் குறிகுணங்கள்

அறியவிம் மூன்றன் தாண்மை சொன்னார் நந்தி

எறியநல் வாத மெறிக்குங்குணங் கேளு

*குறியெணக் **கைகால் குளச்சுவிலாச் சந்து***

பறியென நொந்துடற் பச்சைப்புண் ணாகுமே

- திருமூலர்

வாதம் அதிகரித்தால் கை, கால், குளச்சு, விலாச் சந்து ஆகிய பொருத்துகள் வலி உண்டாகி பச்சை புண் போல் நோவுண்டாகும்.

''காணப்பா வாத முறில்

கால்கைகள் பொருந்தி *நோகும்*

பூணப்பா குடல் புரட்டும்

மலஞ்சலம் பொருமிக் கட்டும்

ஊணப்பா குளிருங் காய்ச்சல்

உடம்பெல்லாங் குத்தும் வாய்வு

வீணப்பா குத மிறுக்கும்

வியர்வையும் வேர்க்குந் தானே''

காவியத்தின் நாடி

வாதம் அதிகரித்தால்

கால் கைகள் பொருத்துகள் நோகும், குடல் புரட்டும், மலம், சலம் குறைந்து கட்டும். குளிர் காய்ச்சல் உண்டாகும். உடம்பெல்லாம் குத்தும். குதம் இறுக்கும், வியர்வை ஆகிய குறிகுணம் காட்டும்

நோய் வரும் வழி

உணவாதி செயல்கள், அன்றாட பழக்கவழக்கங்கள், ஆமதோடம், சுற்றுப்புற சூழ்நிலைகள் ஆகியவை உயிர் தாதுக்களில் மாறுபாடு ஏற்படுத்தி நோயை உண்டாக்கும்.

Environmental factor

வாதவாத் தனைகால மேதோ வென்னில்

மருவுகின்ற வானிகர்க் கடக மாகும்

ஆதவைப் பசியோடு கார்த்திகை தன்னில்

அடருமே மற்றமா தங்கள் தன்னில்

போதவே சமிக்குகின்ற காலமாகும்

பொருந்தியே இவர்தொழில் தான் கண்திறத்தல்

காதவே கண்மூடல் கைகால சைத்தல்

கடிந்தோட்ட முடக்கலொடு நீட்ட லெண்ணே

- *யூகி வைத்திய சிந்தாமணி*

பொருள்

வாதம் தன்னிலையில் சிறப்புறும் மாதங்கள் கடக முதல் துலாம் அதாவது ஆனி முதல் கார்த்திகை ஆகும். இதன் தொழில் கண்திறத்தல், கண்மூடல், கைகால் அசைத்தல், மடக்கல், நீட்டல் என்பன வாகும்.

கடகமுதல் துலாம்வரையும் வாத மாகும்

கண்ணாடி யைப் பசியு மதுவேயாகும்".

- *பதார்த்த குண சிந்தாமணி*

Physical factor

தானென்ற கசப்போடு துவர்ப்பு றைப்பு

சாதகமாய் மிஞ்சுகிலும் சமைத்த வன்னம்

ஆனென்ற வாறினது புசித்த லாலும்

ஆகாயத் தேறலது குடித்த லாலும்

பானென்ற பகலுறக்க மிராவி ழிப்பு

பட்டினியே மிகவுறுதல் பாரமெய்தல்

தேனென்ற மொழியார் மேற் சிந்தையாதல்

சீக்கிரமாய் வாதமது செனிக்குந் தானே

- *யூகி வைத்திய சிந்தாமணி*

கசப்பு, துவர்ப்பு, உப்பு ஆகிய சுவைகள் அதிகரித்ததாலும், ஆறின அன்னம் உண்பதாலும், பகலுறக்கம், இரவு விழித்தல், பட்டினி, பெண்கள் மேல் அதிக இச்சைகொள்ளல் ஆகிய காரணங்களால் வாதம் அதிகரிக்கும்.

கீல்வாயு

வேறுபெயர்கள் :

சந்துவலி, மூட்டுவலி, முடக்கு வாயு, ஆமவாதம் என்பன

- கீல்களில் வளிக்குற்றம் கூடி நோயை உண்டாக்குவதால் **கீல்வாயுயெனவும்**,
- மூட்டுகளில் நோயை உண்டாக்குவதால் **மூட்டுவலி** என்றும்,
- பூட்டுகளை முடக்கி வைப்பதால் **முடக்கு வாயு** என்றும்,
- வயிற்றில் மந்தம் உண்டாகி ஐயத்தைப் பெருக்கி இந்நோய் உண்டாவதால் **ஆமவாதம்** எனவும் பெயர் பெற்றது

இயல்பு:

கீல்களில் வீங்குவது, குத்துவது, நோவது முதலியவற்றை உண்டாக்கி, மடக்கவும், நீட்டவும், அசைக்கவும் ஒட்டாமற் செய்து படுக்கையில் இருத்தி, ஐயமும் கூடி சுரம் முதலிய துணை நோய்களையும் உண்டாக்கும் இயல்புடையதாகும் இதனை கீழ்கண்ட பாடலால் அறியலாம்

"வளியு மையுந் தன்னிலை கெட்டு
வலியுடன் வீக்கச் சுரமும் காய்ந்து
மூட்டுக் டோறும் முடுக்கியே நொந்து
மூட்டுக டன்னின் நீரும் சுரந்து
தாங்கொணா வலியுடன் நொந்திடு மம்மே"

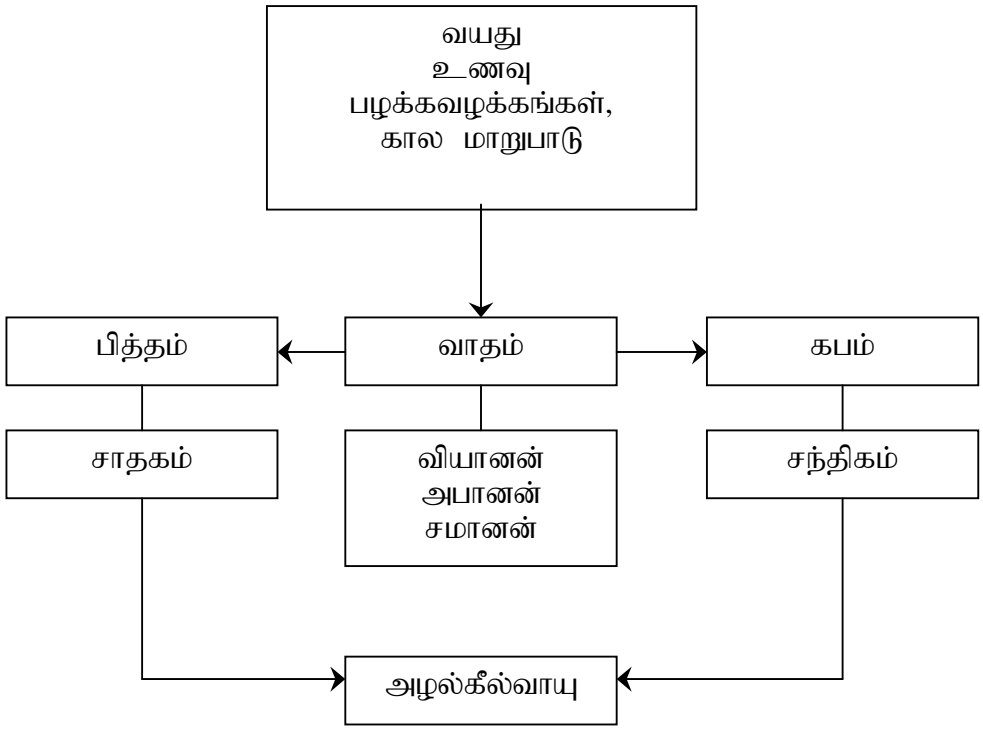
- சபாபதி கையேடு

நோய் வரும் வழி

"வளிதரு காய்கி ழங்கு
வரைவிலா துயிலல் கோழை
முளிதயிர் போன்மி ருக்கு
முறையிலா வுண்டி கோடல்
குளிர்தரு வளியிற் றேகங்
குனிப்புற வுலவல் பெண்டிர்
களித்தரு முயக்கம் பெற்றோர்
கடிசெயல் கருவியாமால்" *சபாபதி கையேடு*

பொருள் :

- வளிக் குற்றத்தைத் தூண்டும் உணவுகளாகிய வாழைக்காய், உருளைக்கிழங்கு, முதலிய பொருள்களையும், செயல்களையும்.
- குளிர்ச்சி தரும் பொருள்களையும் உண்பதாலும்
- குளிர் காற்றிலிடுபடல்
- மழையில் நனைதல்
- பனி வாடையில் படுத்திருத்தல்
- உயர்ந்த மலையில் தங்குதல் ஆகியவைகளால் இந்நோய் பிறக்கும்
- அன்றியும், பெண் கூட்டால் பிறந்த மேக நோய்க்கு துணையாயும்
- தாய் தந்தையரின் வழியாகவும் வருவதுண்டு



வகைகள் :

கீல்வாயு பத்து வகைப்படும் அவை

1. வளிக்கீல்வாயு
2. அழல் கீல் வாயு
3. ஐயக்கீல்வாயு
4. வளித்திக்கீல்வாயு
5. வளிஐயக்கீல்வாயு
6. தீவளிக் கீல்வாயு
7. தீ ஐயக்கீல்வாயு
8. ஐயவளிக் கீல்வாயு
9. ஐயத்திக் கீல்வாயு
10. முக்குற்றக்கீல்வாயு என்பன வாகும்

அழல்கீல்வாயு

குறிகுணங்கள்:

"பித்தக்கீல் வாய்வு தன்னாற்
பிறங்குகீன் மூட்டு வீங்கிச்
சித்தர்செய் மருந்து வத்துக்
சீர்படாத் தன்மைத் தாகித்
தத்தறு காய்ச்சல் கண்டு
சாலவே தனைதான் தந்தே
மெத்தறு சிகிச்சை தன்னால்
மென்மேல் நீங்கு மப்பா"

- சபாபதி கையேடு

பொருள்:

இது வளிக்குற்றம் தன்னிலையில் மிகுந்துள்ள போது அழல் குற்றத்தைத் தூண்டக்கூடிய உணவு செய்கை முதலியவற்றால் பிறக்கும் நோயாகும். இந்நோயில், முட்டிகளில் உண்டாகும் வீக்கம் நாளுக்கு நாள் பெருத்துக் கொண்டே வந்து, மிகுந்த தீக்குற்றத்தால் கீல்களிடையேயுள்ள பசை வறண்டு பசையற்றுக் கீல் அசையும் போதெல்லாம் நட்டையுடைதலும் "கலுக்" "கலுக்" கென்ற ஓர் ஒலி உண்டாவதுமாய் இருக்கும் சிலவேளைகளில் கீலுக்குக் கீல் கூடி ஒட்டிக் கொண்டு, மடக்க முடியாமலே நின்று விடுவதும் உண்டு இந்நோய்க்கு சிறு சுரமும் வரும்.

SIGNS AND SYMPTOMS

It is characterized by swelling of joints associated with severe pain. Since it is not quickly responding to medicine. The prolonged and proper medical care is said to be essential.

DIAGNOSIS IN SIDDHA

உயிர் தாதுக்கள்:

முக்குற்ற வேறுபாடு

வாதம்	தொழில்	அழல்கீல் வாயுவில் பாதிக்கப்பட்ட குற்றம்
பிராணன்	மூச்சு வாங்கல் விடுதல் செய்யும்	இயல்பு
அபானன்	கீழ்நோக்கி மலத்தைத் தள்ளும்	பாதிப்பு (மலக்கட்டு)
வியானன்	உறுப்புகளை நீட்டி மடக்க செய்யும்	பாதிப்பு (கால்களை நீட்டி மடக்குவதில் சிரமம்)
உதானன்	உணவின் சாரத்தை உடலில் நிறுத்தும்	இயல்பு
சமானன்	மற்ற வாயுக்களை சரிப்படுத்தும்	பாதிப்பு (மற்ற வாயுக்கள் பாதிப்பு)

நாகன்	எல்லா கலையும் கற்கும் படி செய்தல்	இயல்பு
கூர்மன்	கண்களை திறக்கவும் மூடவும் செய்யும்	இயல்பு
கிருகரன்	நாவிற் கசிவையும் நாசியிற் கசிவையும் உண்டாக்கும்	இயல்பு
தேவதத்தன்	சோம்பல், உடல் முரித்தல் உண்டாகும்	இயல்பு
தனஞ்செயன்	இறந்த பின் மூன்றாம் நாள் தலைவெடித்து வெளியேறும்	-

வ.எண்	**பித்தம்**	**தொழில்**	**அழல்கீல் வாயுவில் பாதிக்கப்பட்ட குற்றம்**
1	அனற்பித்தம்	உண்ட உணவு பொருளை செரிக்கும்படி செய்யும்	இயல்பு
2	இரஞ்சகம்	செந்நீரை மிகுதிபடுத்தும்	இயல்பு
3	சாதக பித்தம்	விருப்பமான தொழிலை செய்து முடிக்கும்	பாதிப்பு (தொழில் செய்ய சிரமம்)
4	ஆலோசக பித்தம்	கண்களுக்கு பொருளை தெரிவிக்கும்	இயல்பு
5	பிராசக பித்தம்	தோலுக்கு ஒலியை கொடுக்கும்	இயல்பு

வ.எண்	கபம்	தொழில்	அழல்கீல் வாயுவில் பாதிக்கப்பட்ட குற்றம்
1	அவலம்பகம்	மற்ற நான்கு ஐயங்களுக்கும் பற்று கோடாயிருக்கும்	பாதிப்பு
2	கிலேதகம்	செரித்தல்	இயல்பு
3	போதகம்	சுவையை அதிகரிக்கும்	இயல்பு
4	தற்பகம்	கண்களுக்கு குளிர்ச்சி	இயல்பு
5	சந்திகம்	கீல்களில் நின்று இயற்கையாய் எல்லாக் கீல்களையும் ஒன்றோடொன்று பொருத்தி தளர செய்யும்.	பாதிப்பு (கீல்களில் நீட்டி மடக்க சிரமம்).

In “Azhal keel vayu”, the vadha kuttram is mainly affected followed by pitham and kabam.

When the vadha dosham is in vitiated condition ,activity and dietary habits provoke the pitha dosam and derange the kapham.

The normal structural quality of the pitham is

- Heat (வெப்பம்)
- Sharpness (கூர்மை)
- Lubrication (நெய்ப்பு)
- Relaxation (நெகிழ்ச்சி)
- Motion (இயக்கம்)

In Azal keel vayu the deranged pitham may produce stiffness, restriction of movements in the affected joints.

The normal structural quality of Kapham is

- நெய்ப்பு (Lubrication)
- வழுவழுப்பு,
- மென்மை

In Azal keel vayu the deranged kapham may produce decreased secretion of synovial fluid may lead to loss of lubrication resulting in crepitation of joints.

முக்குற்ற வேறுபாடு:

வளிமிகு வபான வியான
வாயுக்க ளதிக ரிக்கும்
இளமிக மலநீர்க் கட்டும்
இயம்பிய வபானன் செய்யும்
விளிவிலா வியானன் கீலின்
விளங்குறு புழைக டோறும்
ஒளியுறு குற்ற மெல்லா
மொன்றிலென் றுலவச் செய்யும்

சபாபதி கையேடு

வ.எண்	உடல் தாதுக்கள்	தொழில்	அழல்கீல் வாயுவில் காணப்படுவது
1	சாரம்	உடலையும் மனதையும் ஊக்கமுறச் செய்வது	பாதிப்பு (உடல்சோர்வு, மனசோர்வு)
2.	செந்நீர்	அறிவு, வன்மை, ஒளி, செருக்கு இவைகளை நிலைக்க செய்வது	இயல்பு
3.	ஊண்	உடலின் உருவத்தை அமைத்தலும், என்பை வளர்த்தலும்	பாதிப்பு (வீக்கம் காணப்படல், ஊண் குறைதல்)

4.	கொழுப்பு	உறுப்புகள் இயங்க அவற்றிற்கு நெய்ப்புபசை ஊட்டுவது	பாதிப்பு (கீல்களில் நெய்ப்பு பசை குறைதல்)
5.	எலும்பு	உடல் அசைவிற்கு அடிப்படையாயிருத்தல்	பாதிப்பு (என்புபலம் குறைதல்)
6.	மூளை	என்புக்குள் நிறைந்து வன்மையும், மென்மையும் தருவது	பாதிப்பு
7.	வெண்ணீர்	கரு தோற்றத்திற்கு முதலாய் நிற்பது	இயல்பு

எண் வகை தேர்வு

"நாடி ஸ்பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திரமிவை மருத்துவராயுதம்"

- நோய் நாடல் நோய் முதல் நாடல் (முதல் பாகம்)

1. நாடி :

"வாதத்தில் சேத்துமம் மாகில் வலியோடு வீக்க முண்டாம்"

அகத்தியர் நாடி

"அறிந்துபார் வாதமே தனித்தானால்
சரிந்திடவே கால்முடக்கும்"

அகத்தியர் ரத்தின சுருக்கம்

"காணப்பா வாத மீறில் கால்கைகள் பொருந்தி நோகும்"

காவியநாடி

வாதம், வாதபித்தம், பித்த வாதம்

2. ஸ்பரிசம் : பாதிக்கப்பட்டுள்ள மூட்டு பகுதியில் மித வெப்பமாகவோ, இயல்பாகவோ காணப்படும்

3. நா: இயல்பு, வாதநோயில் நா தடித்து இருக்கும்

4. நிறம்: இயல்பு, மாநிறம்

5. மொழி : சமஒலி

6. விழி : இயல்பு, வாத நோயில் விழி கறுத்து இமை தடித்திருக்கும்

7. மலம்: பாதிப்பு (மலசிக்கல் காணப்படும்)

8. மூத்திரம் : மூத்திரம் கடுப்புடன் கொஞ்சமாக நுரையுடன் இறங்கும்

நெய்க்குறி

"அருந்து மாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே"

Prior to the day of urine examination the patient is instructed to take a balanced diet and quantities of food must be proportionate to his routine intake.

The patient could have no disturbed sleep. After waking up in the morning the first urine voided is collected in a clear wide mouthed glass container and is subjected to analysis of "Neerkuri and Neikkuri" within one and a half an hour.

The collected specimen was examined by the following method. The collected urine specimen is kept in a glass container and observed under direct

sunlight without shaking the vessel. Then drip one drop of gingelly oil and observe the spreading pattern and concludes as follows.

"அரவென நீண்டினகே வாதம்"
"ஆழி போற்பரவின் அ்தே பித்தம்"
"முத்தொத்து நிற்கின் மொழிவதென் கபமே"
"அறவிலாழியும் ஆழியில் அரவும்
அரவின் முத்தும் ஆழியில் முத்தும்
தோற்றில் தொந்த தோடங்களாமே"

நீர்க்குறி:

"வந்த நீர்க்கரி எடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவவை யறைகுது முறையே"

நிறம் (Colour)
எடை (Specific Gravity)
மணம் (Smell)
நுரை (Frothy nature)
எஞ்சல் (Quantity of urine voided)

வாத நோயில்,

"ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணமுறைக்கிற்
பூங்கொடி கடுத்துநொந்து சிறுத்துடன் பொருமி விழும்"

பருவ காலங்கள்: (Seasonal variations)

குற்றம்	காலம்
வாதம் - தன்னிலை வளர்ச்சி	முதுவேனிற்காலம்
வாதம் - வேற்றுநிலை வளர்ச்சி	கார்காலம்
வாதம் - தன்னிலையடைதல்	கூதிர்காலம்

வாதத்தின் இயற்கை குணம் வறட்சி, முதுவேனிற் காலத்திலும் வறட்சி ஏற்படுவதால் வாதநோய் அதிகரிக்கிறது.

திணை: (Geographical distribution)

வாத நோய் ஏற்படும் நிலங்கள்

முல்லை	-	காடும் காடு சார்ந்த பகுதியும் வாத சார்பான பல நோய்கள் உண்டாகும்
நெய்தல்	-	கடலும் கடல் சார்ந்த இடமும் இந்நிலத்தில் கொடுமையான வாதநோய்களே உண்டாகும்.
பாலை	-	மணலும் மணல் சார்ந்த பகுதியும் பாலைநிலம் வாதம், பித்தம், கபம் இவற்றால், விளைகின்ற பிணிகட்கு இருப்பிடம் ஆகும்.

நோய் கணிப்பு விவாதம் (DIFFERENTIAL DIAGNOSIS)

1. வளிக்கீல் வாயு

வலிக்குத்தல் வீக்கங் காணும் வாய்தொண்டை, வறட்சி காய்ச்சல்
தலைவலி மார்து டிப்புத் தாங்கொணா வலிவீக் கந்தான்
நிலவுகாற் கணுக்கு றங்கு நீடுதோள் முழங்கைக் காற்காம்
மலக்குடற் கட்டு வேர்வை வாதத்தில் வாய்வி தாமே.

சபாபதி கையேடு

It is characterized by execruciating pain and swelling knee joints, hip joints, ankle joints, shoulder joints, elbow joints and associated with dryness of mouth, pyrexia, Head ache, palpitation, constipation and sweating.

2. ஐயக் கீல்வாயு

"கருதருங் கபக்கீல்வாயு கண்டின் உடலிளைக்கும்
உருமெலி வாக்குங் கொள்ளும் உண்டியைச் சுருக்கும் இன்பந்
தருதுயில் நீங்கு முட்டிற் றாங் கொணா வலுவை யாக்கும்

இருமலே விக்கல் வாந்தி சோபைபாண் டெழுப்பும் பாரே"

- சபாபதி கையேடு.

It is characterized by loss of weight. Anorexia, severe pain in the knee joint, insomnia, cough, hiccough, vomiting, anaemia and dropsy. The common site are vertebrae, hip joint, knee joint.

3. வளி ஐயக்கீல் வாயு

"வயங்வா தக்க பக்கில் வாயுவான் வலிமி ருந்ததே
உயங்குநீர் கோத்துக் கீல்கள் ஓரியின் தலைபோற் காணும்
நயங்கொள்ள முடக்கல் நீட்டல் நண்ணிடா மெய்யுங் காயும்
மயங்குறு முறக்க மின்னாய் மன்னிய நெரிக்கட் டாமே"

It is characterized by pain in the joints and effusions of joint fluid, swelling, restricted joint movements, pyrexia, fainting, insomnia, lymph adenopathy. The affected joints look like "Fox's Head".

AIMS OF TREATMENT OF OA KNEE:

- Relieve pain
- Restore function
- Reduce disability if any
- Rehabilitation

LINE OF TREATMENT

The treatment of Siddha system includes not only the removal of signs and syptoms of a disease but also in total uprootment of the diseases.

In Azhal keel vaayu the deranged vatham is brought to its normal state by purgation

"விரேசனத்தால் வாதம் தாழும்"

1. 15ml of **vellai ennai** is given with warm water early morning (single dose) in empty stomach before starting the treatment with trial drug.

2. Internal medicine

Sagala vadha chooranam-1.5gm three times/day given with water after food.

3. External medicine

Ilagu vadha kesari thylam - External application.

Apart from other department, sirappu maruthuvam department gives equal important to external therapy in siddha system of medicine along with its internal and external medicines.

EXTERNAL THERAPIES:

They are kattu, pattru, vaedhu, puravalayam, Thokkanam, ottradam, varmam, asanam etc.,

1. கட்டு (Bandage)

Kattu is the application of medicine made of herbs, to the affected area and bandaged.

Herbals:

- Vitex negundo (நொச்சி)
- Justicia beddomei (ஆடாதோடை)
- Clerodendrum phlomoidis (வாதமடக்கி)

Procedure:

These plants leaves are made into small pieces and it is mixed with external oil and it is spread in a piece of cotton which is wrapped along the affected joint and bandaged with dressing cloth.

Use:

It is used in the condition of acute swelling and pain in osteoarthritis of knee joint.

2.தொக்கணம் (Massage)

Thokkanam is one of the 32 forms of external medicines, mentioned in ancient siddha literature, improves vadha disease by regulating the vadha disturbance.

It signifies a group of therapeutic procedures usually done with hand on the skin of the body in 9 ways, with or without the application of medicated oils (Thylam). These procedures can either be curative or palliative.

"தொக்கணத்தி னாலிரத்தந் தோல்ஊ ணிவைகட்டு
மிக்கு சவுக்கியஞ்ச மீரணும்போ - மெய்க்கதிக
புட்டியுறக்கம் புணர்ச்சி யிவைகதிக்கும்
பட்ட அலைச்சலறும் பார்"

தேரன் பொருட்பண்பு

Theraiyar says that thokkanam.

- Strengthens blood, flesh and skin
- Improves sleep
- Vitality and relax whole body
- Regulates nerve functions, improves blood circulation, enhances immunity and removes excess tissues.

The treatment normally starts with applying the medicated oil on the knee joint.

Definition:

Massage is a term applied to certain manipulations of the soft tissues. These manipulations are most efficiently performed with the palmar aspect of hand and administered for the purpose of producing effects on the nervous system, muscular system as well as on the local and general circulation of the blood and lymph.

Massage is the mechanical stimulation of soft tissues of the body by rhythmically applied pressure and stretching.

Sequence of Knee Massage:

1. Friction
2. Rounding
3. Stroking
4. Rolling
5. Percussion
6. Joint movements

Action of Massage:

The medicated oil apply to the skin for the purpose of massage penetrate through the skin and reach different tissues and other elements of the body. The medicated oil used for massage remains in the skin for 300 seconds and then gradually spreads to senneer, Oon, Kozhupu, enbu and Moolai.

General effects of massage:

1. Relaxation
2. Increased circulation helps to accelerate the lymphatic system, which absorbs and eliminates many waste products
3. Stimulation of sensory and motor nerves
4. Relief pain and tension

Local effects of massage

1. Local vasodilation
2. Increase the blood circulation and improves muscle nutrition
3. Increased joint mobility
4. Nourishment to the periostium
5. Absorption of the skin's waste products

Contra indications:

Local

- Recent injuries
- Recent scar
- Dislocation
- Fractures
- Varicose vein
- Hyperpyrexia
- Cancerous tissue
- Skin diseases

3. ஒற்றடம் (Fomentation)

Ottradam is the application of hot medicated packs.

There are various type of ottradam mentioned in siddha literature. In this study 2 types are used.

- Hot fomentation by medicated pouches.
- Hot fomentation by lemon directly.

I . Medicated pouches:

Medicated pouches are made up of pieces of leaves.

- Vitex negundo (நொச்சி)
- Clerodendrum Phlomoidis (தழுதாழை)

- Calotropis gigantea (எருக்கு)
- Delonix elata (வாத நாராயணன் இலை)

Uses :

- It reduce pain and swelling
- Increases blood circulation

2. Lemon Ottradam:

Lemon is cut into two pieces. It is then covered by a piece of cloth. The cut surface of the lemon piece is dipped into the luke warm gingelly oil and applied over the affected parts for 1 hour.

VARMAM ADANGAL:

Life energy flows in the body in a particular pathway. There are certain key points in the body where this life energy "Vaasi" is concentrated. Normally these are the points where two bones joint or a muscle inserts into a bone or the blood vessels, nerves are prominent. These points called "Varmam points"

The therapy of physical manipulations either by applying pressure on the varmam points or using massage therapy with specific medicated oil or blowing certain medicines in the nose or ear is called as varmam treatment.

Varmams or rhythmically turned by varmam therapists for managing various diseases like nervous disorders, arthritis, back pain, spinal problems etc.,

Varmam points to be manipulated for osteoarthrosis are as follows

1. **Mootu varmam :** Centre part of posterior apsect of both knee joints. Mild pressure is applied using tips of middle three fingers.

2. **Kuthiraimuga varmam**

   Location – Tibial tuberosity

   Pressure is applied for three time using bulb of thumb.

3. **Mootu Suzharchi**

   This method stimulates varmam points around knee joint by a circulatory gripping massage around patella using thumb and index finger.

4. **Santhuvarmam :**

   Location : on either side of the mootu varmam

5. **Sirattai varmam :**

   Location : on the patella bone.

6. **Mozhi poruthu varmam:**

   Location : Posterior surface of the knee joint

7. **Asaivu thiru kannu varmam:**

   Location : In centre of anterior surface, 2 finger breadth sidewards to the knee joint.

8. **Pathaippu Varmam:**

   Location : 6 finger breadth lateral to the patella.

YOGASANAM:

Yoga therapy is one of the form of relaxing body and mind. Certain simple asana techniques are discussed to knee pain and strengthening thigh muscle.

Asanam:

- Vajrasanam
- Utkatasanam
- Machasanam
- Arthamachendrasanam

PRANAYAMAM

The control of breathing called as pranayama

It include three process

1.Rechaka– Process of exhalingor breathing out.

2. Puraka – Process of inhaling

3. Kumbhaka-Process of retaining breath.

Kumbhaka of two types

1.Internal kumbhakam- Act of retaining breath

2. External kumbhakam- Action of not breathing in and out.

Pranayama

Pranayama is to yoga what heart is to human body

Pranayama is an important bridge between outward practices of yoga like asanas and inward surrendering yoga practices. It is a link between mind and body. It consist of deepening and extending prana or life force until it leads to condition of peace.

Prana – Life force

Anayama – control

Benefit

- Cause rhythmic expansion of lungs creating better circulation within kidney, liver, stomach, spleen, intestine, skin etc.,
- The mind is calm and concentration becomes better.
- Skin become smother because of better circulation and release of tension.
- Oxygen is provided for better functioning of heart and lungs.

Aims of exercises in osteoarthritis of knee

- To increase the range of movements.
- To increase the stability and shock absorption
- To prevent deformity
- To improve posture
- To reduce pain and stiffness.

Rules of the exercises:

- Build up the exercises gradually
- Avoid rough ground while exercising
- To take warm baths before starting the exercises
- To perform the exercises 20 times each twice a day and later four times a day

Conservative measures:

1. Isometric quadriceps exercise to maintain strength of main stabilizing factor of knee.
2. Avoid movements/ positions which increase patellofemoral pressure. Avoid sitting cross legged, climbing status, and squatting positioning.
3. Use of walking stick held in ipsilateral hand or use of crutches to prevent stress on affected knee.
4. Apply preferably moist heat. Avoid short wave diathermy which is destructive
5. Immobilize the knee by a bandage
6. Weight reduction by exercise and diet control is advised.

MODERN ASPECT

Osteoarthritis

Osteoarthritis, also referred to as degenerative joint disease, degenerative arthritis. Osteoarthrosis or hypertrophic arthritis, is among the most frequent and symptomatic medical problems for middle aged and older people. It affects people of all goups in all geographic locations, occurs both in men and women but commonly in women, and it is the most common cause of long term disability in patient populations older than 65 years. More than one third of people older then 45 years report joint symptoms that vary from a sensation of occasional joint stiffness and intermittent aching associated with activity to permanent loss of motion and constant deep pain. The joint degeneration that cause the clinical syndrome of osteoarthritis occurs most frequently in the hand, foot, knee, hip and spine joints, but it can develop in any synovial joint with the prevalence of degenerative changes increase with age.

Though osteoarthritis affects many joints knee is the most common which we come across in our day today practice.

ANATOMY OF THE KNEE JOINT

The knee is the largest and more complex joint of the body. Consist of 3 bones and an extensive network of ligaments and muscles. The knee is one of the most important joints of our body. It plays an essential role in locomotion related to carrying the body weight in horizontal (Running and walking) and vertical (jumps) direction.

Bones of knee joint.

The knee joint is complex synovial joint incorporating two condylar joint between the condyles of the femur and tibia. One saddle joint between the femur and the patella.

The knee joint is formed by

1. The condyles of the femur
2. The patella
3. The condyles of the tibia.

The knee joint capsule

The joint is a thick ligamentous structure that surrounds the entire knee. Inside this capsule is a specialized membrane known as the synovial membrane which provides nourishment to all the surrounding structures other structures include the infrapatellar fat pad and bursa which function as cushion to exterior forces on the knee. The capsule is strengthened by the surrounding ligaments.

Ligaments of the knee joint

The ligaments surrounding the knee offer stability by limiting the movements.

Knee joint is supported by following ligaments.

1. Fibrous capsule
2. Ligamentum patella
3. Tibial collateral or medial collateral ligament
4. Fibular collateral ligament
5. Oblique popliteal ligament
6. Arcuate poplitial ligament
7. Anterior cruciate ligament
8. Posterior cruciate ligament
9. Medial meniscus
10. Lateral meniscus
11. Transverse ligament

Bursae around the knee:

There are 13 bursae around the knee

1. Anterior - 4
2. Lateral - 4
3. Medial - 5

The largest communicative bursa is the supra patellar bursa.

Menisci

Each knee joint has two crescent shaped cartilage menisci. The menisci serve to protect the ends of the bones from rubbing on each

other and to effectively deepen the tibial sockets in to which the femur attaches. They also play a role in shock absorption, and may be cracked or torn, when the knee is forcefully rotated or bent.

Muscle group Surrounding the knee joint.

The two main muscle groups of the knee joint are the quadriceps and the hamstrings. Both play a vital role, both moving and stabilizing the knee joint.

Movements of knee joint

Flexion - 120 - 150 °

Extension - $0 – 5^{o}$

Blood Supply

Arteries of the knee

The femoral artery and the politeal artery help form the arterial network surrounding the knee joint.

6 main branches

1. Superior medial genicular artery
2. Superior lateral genicular artery
3. Inferior medial genicular artery
4. Inferior lateral genicular artery
5. Descending genicular artery
6. Recurrent branch of anterior tibial artery.

OSTEO ARTHRITIS

Definition:

Osteoarthritis defined as a degenerative non-inflammatory joint disease characterized by destruction of articular cartilage and formation of new bone at the joint surfaces and margins. However, it is a misnomer and the right term is osteoarthrosis or degenerative joint disease (DJD).

It results from the rate of degeneration being greater than the rate of repair and / or regeneration of articular cartilage.

By the age of 40 years about 40% of the population have radiographic signs of osteoarthrosis of major weight bearing joint and 50% of these will have symptoms.

Osteoarthritis commonly affects the large weight bearing joint such as hips and knees.

Classifications:

It could be divided into 2 types

1. Primary or idiopathic osteoarthritis
2. Secondary osteoarthritis

Primary osteoarthritis:

Primary osteoarthritis is due to the wear and tear changes that occur in old age in which weight bearing joints such as hip and knees are more commonly affected.

- Obesity is a predisposing factor
- Primary osteoarthritis is commoner than secondary osteoarthrosis

(Primary osteoarthritis of the knee (also called idiopathic)

Aetiological causes for primary Osteoarthritis:

- Though exact cause is not known. The following factors are suspected to play an important role in causation of primary Osteoarthritis.
- Obesity
- Genetics and hereditary
- Occupation involving prolonged standing.
- Sports
- Multiple endocrinal disorder.
- Multiple metabolic disorders.

Secondary osteoarthritis:

Secondary osteoarthrosis refers to arthritis occurring in a joint secondary to a previously occurring disease or disorder of the joint.

It may occur in any age and involve any joint.

Factors associated with secondary Osteoarthritis are as follows:

1. Congenital malformation of joints
2. Traumatic alteration of articular surfaces causing articular incongruence.
3. Loose bodies in the joint
4. Deforming of the joint

   Eg: Genu varum
5. Internal derangement of knee

Aetiological factors in Osteoarthritis

1. Geography

In a review of Osteoarthritis in 6 population living in different climates, as determined by latitude.

2. Racial groups:

Prevalence surveys have been carried out in non causasian population.

3. Age

Osteo arthritis rises progressively with age such that by 65 years. 80% of people have radiographic evidence of Osteoarthritis. Though only 25-30% are symptamatic.

4. Gender

The crude prevalence of Osteoarthritis is the same in both sexes, but in females more joints are affected. At age above 45years Osteo arthritis appears slightly more frequently in men and involves one or more joints. At ages greater than 55 years Osteoarthritis is more frequent in women and involve multiple joints. It has been shown that Osteoarthritis in post menopausal women was associated with higher body weight, higher subcutaneous fat and stronger muscles linked to hormonal deficiencies.

5. Socio economic groups

6. Occupation

Occupation with physical activity involve repetitive use of particular joint over long period of time. Sports enthusiasts and professional athelets may be conditiond so that their muscles protect their joints, but the manual labourer, factory worker may continious to use the joints even after muscular exhausion.

7. Obesity

Obesity has been associated with increased bone mass major cause of Osteo arthritis is the failure of subchondral bone to deform with an impact load, leading to increased cartilage damage.

8. Metabolic factors

There has been some evidence for a link between Diabetes and Osteo arthritis, possibly through elevated growth hormone levels that alter cartilage metabolism and increase bone density. Hyperuricaemia has been found more frequently in people with generalized Osteoarthritis.

9. Mechanical factors

It has been long considered that mechanical stress, such as single impact stress, gross anatomical damage, subtle mechanical derangement (long standing internal derangement of the knee) joint, hypermobility and repeated impacts has been associated with Osteoarthritis.

Others

Nutritional problems may cause Osteoarthritis

Pathogenesis:

Normal Articular Cartilage:

Articular cartilage is connective tissue covering the ends of the bones. It is aneural, alymphatic, avascular structure water and chondrocytes gives strength to the articular cartilage.

Supremely adapted to transmit load and movement from one skeletal segment to another. It increases the area of the articular surfaces and helps to improve their adaptability and stability; it changes its shape under load and distributes compressive forces widely to the subarticular bone and covered by a

film of synovial fluid it is more slippery than any man-made material, offering very little frictional resistance to movement and surface gliding.

This specialized connective tissue has a gel-like matrix consisting of a proteoglycan ground substance in which are embedded an architecturally structured collagen network and a relatively sparse scattering of specialized cells, the chondrocytes, which are responsible for producing all the structural components of the tissue. It has a high water content (60-80%), most of which is exchangeable with the synovial fluid.

The fibrillar component of articular cartilage is mainly type II collagen. The collagen bundles are arranged in structured patterns, parallel to the articular surface in the superficial zones and perpendicular to the surface in the deeper layers where they anchor the articular cartilage to the subchondral bone.

Normal cartilage has two main components

i) Extracellular matrix
ii) Chondrocytes

- Extracellular matrix contain water, collagen (Type II collagen present 90 – 95%) proteoglycans and non collagenous protein.
- Condrocytes produce collagen, proteoglycans and enzymes, chondrocyte metabolism responds to both mechanical and chemical stimuli osteoarthritis is a degenerative condition primarily affecting the articular cartilage.

Articular cartilage changes in Osteoarthritis

- The earliest changes, while the cartiage is still morphologically intact, are an increase in water content of the cartilage and easier extractability of the matix proteoglycans.
- Failure of the internal collagen network that normally restrians the matrix gel. At a slightly later stage there is loss of proteoglycans and defects

appear in the cartilage. As the cartilage becomes less stiff, secondary damage to chondrocytes may cause release of cell enzymes and further matrix breakdown. Cartilage deformation may also add to the stress on the collogen network, thus amplifying the changes in a cycle that leads to tissue breakdown.

- The levels of certain molecular messengers, including IL-I, TNF and nitric oxide are increased in osteoarthritic cartilage. Apoptosis is alos increased, likely responsible for a decrease in the number of functional chondrocytes.
- Articular cartilage has an important role in distributing and discipating the forces associated with joint loading. When it loses its integrity these forces are increasingly concentrated in the subchondral bone. The result focal trabecular degeneration a cyst formation as well as increased vascularity and reactive sclerosis in the zone of maximal loading.
- What cartilage remains is still capable of regeneration, repair and remodelling. As the articular surfaces become increasingly malapposed and the joint unstable cartilage at the edges of the joint reverts to the more youthful activities of growth and endochondral ossification giving rise to the bony excrescences, or osteophytes.
- Articular cartitage does not usually regenerate after injury or diseases leading to loss of tissue & formation of a defect.
- The international cartilage repair society has set up an arthoscopic grading system by which cartilage defect can be ranked.

Grade 0 - (normal) healthy cartilage

Grade 1 - The cartilage has a soft spot or blisters.

Grade 2 - Minor tear visible in the cartilage.

Grade 3 - Lesions have deep crevices (morethan 50% of cartilage layer.)

Grade 4 - The cartilage tear exposes the underlying bone.

- Articular cartilage has a very limited capacity for self repair. Small damage does not repair itself and can often get worse over time. As cartilage is aneural and avascular, shallow damage often does not trigger pain.
- A grade 4 lesion goes completely through all layers of the cartilage. It is diagnosed as a full thick ness lesion. Sometimes part of the torn cartilage will break off inside the joint. Since it is no longer attached to the bone, it can begin to more around with in the joint. Cartilage even more damage to the surface of the cartilage. This unattached piece as a loose body.

PATHOLOGY

The cardinal features are:

1. Progressive cartilage destruction
2. Subarticular cyst formation
3. Sclerosis of the surrounding bone
4. Osteophyte formation
5. Capsular fibrosis.

- The first change observed is an increase in water content and depletion of the proteoglycans from the cartilage matrix. Repeated weight bearing on such a cartilage leads to fibrilation.
- The cartilage gets abraded by the grinding mechanism at work at the points of contact between the apposing articular surfaces, until eventually the underlying bone is exposed with further "rubbing" the subchondral bone becomes hard and glossy (eburnated)
- Subchondral sclerosis and subchondral cysts are seen.
- Bony projections and new bone formation (osteophytes) occur within the joints

- Thickening of the joint capsule and synovium leads to stiffness and deformity of the joint
- In the knee medial compartment is affected more than the lateral leading to a varus deforming (Genu varum)

Signs and Symptoms:

The patient presents with

- Pain that starts insidiously and increase overtime
- Swelling – as a result of joint effusion
- Morning stiffness, which usually lasts no more than 30 minutes.
- Stiffness from the thickening of capsule and synovium
- Crepitus - While moving the joint
- Limping - due to pain and deformity of the joint
- Tenderness
- Restricted range of joint movements.

Examination of knee joints:

- The patient should be examined in the lying down position. First in supine position and then in prone position
- Always compare the affected knee with the opposite normal knee

INSPECTION:

1. **Gait:** Recurvatum deformity can be best appreciated when the patient walks. A patient with weakness of the quadriceps muscles may walk with "hand knee gait".
2. **Skin colour -** If acute Osteoarthritis redness present due to inflammation (Swelling)
3. **Swelling :** Mild Swelling present around the knee joint

4. **Deformity:** Varus deformity present. Flexion deformity is the commonest. Initially, it occurs due to spasm of the hamstring muscles in any painful conditions of the knee.
5. **Muscle wasting:** Quadriceps muscle wasting may be seen.
6. **Skin over the knee:** It may be stretched and shiny in an inflammatory disease.

PALPATION :

1. Local Temperature - may be present due to any Inflammation
2. Swelling – 2 important test
    a. Fluctuation test
    b. Patellar tap - positive in moderate amount of fluid in knee joint.
3. Tenderness : Tenderness on the joint line or tibio femoral joint line, Patello femoral joint.
4. Irregular and enlarged looking joint due to formation of peripheral **osteophytes.**
5. **Crepitation** present on moving the joint
6. **Nodules** - Loose bodies may be felt.
7. **Movement :**
    a. **Flexion** – Normal range of movement (0 – 140 degrees)
    b. **Extension** – may be restricted
8. **Measurement :**
    a. **Muscle girth** (10cm above the patella) – Quadriceps muscle wasting may be present.
    b. **Measurement at joint line of knee -** for prognosis of swelling

Diagnosis criteria:

- Age greater than 40 years
- Pain and swelling in knee joint

- Stiffness from the thickening of capsule and synovium
- Crackling sensation present in knee joint while moving the joint
- Tenderness on the joint line
- Osteophyte formation at the joint margins
- Restricted joint movements
- Deformity such as Genu varum may be present
- Asymmetrical narrowing of the joint space.
- Subchondral sclerosis
- Subchondral cysts.
- Osteophytes at the joint margin
- Loose bodies within the joint Subluxation / dislocation at the later stage,
- Deformity of joint is present

Laboratory Findings:

There is no blood test for the diagnosis of osteoarthritis. Blood test are performed to exclude diseases that can cause secondary osteoarthritis.

These consist of the following

- Serological tests and ESR to rule out Rheumatoid arthritis
- Serum uric acid to rule out Gout.
- Arthroscopy, if a loose body of frayed meniscus is suspected.

Radiological features:

The diagnosis of osteoarthritis is mainly radiological

- asymmetrical narrowing of the joint space
- Subchondral Sclerosis dense bone under the articular suface
- Subchondral cysts
- Osteophytes at the joint margin

- Loose bodies within the joint
- Subluxation / dislocation at the later stage
- Deformity of joint if present.

Radiological classification of knee. (Ahlbach) AP weight bearing and lateral views

Type I – Joint space narrowing

Type II – Total lost of joint space

Type III - <5mm tibial erosion but posterior part of the plateace infact.

Type IV – >5mm tibial erosion and erosion of posterior plateace

Type V – Subluxation.

COMPLICATIONS OF OSTEOARTHRITIS

The major complication of osteoarthritis of knee

- Joint deformities
- Capsular herniation
- Loose bodies
- Subluxtion

RISK FACTORS:

1. **Trauma –** Fractures involving the articular surface are obvious precursors of secondary osteoarthritis.
2. **Occupation –** Osteoarthritis of the knee in workers engaged in knee – bending activities
3. Increase risk in **Athletes**
4. **Obesity :** Causes increased joint loading and predisposes to Osteoarthritis of knee
5. **Family history**

MATERIALS AND METHODS

To study on clinical evaluation of the disease "AZHL KEEL VAYU" with the drug SAGALA VADHA CHOORANAM (INTERNAL) and ILAGU VADHA KESARI THYLAM (EXTERNAL) was carried out in Postgraduate Sirappu Maruthuvam, Government Siddha Medical College, Palayamkottai. 20 patients of both male and female were selected for the studies and admitted in In patient ward for among 20 IP patients, 10 IP patients will be given massage and varmam treatment along with internal medicine and remaining 10 IP patients will be given massage fomentation without internal medicine.

Another 20 patients are treated with trial drug in the outpatient ward.

SELECTION OF PATIENTS:

INCLUSION CRITERIA:

- Age – 40 – 65 Years
- Sex - Both male and female
- Patients having symptoms of arthritis of both knee joints, swelling, stiffness, crepitation, restricted movements of both knee joints.
- Patients who are willing to undergo radiological investigation and give blood for laboratory investigation.
- Patient willing to sign the informed consent stating that he/she will consciously stick to the treatment during 48 days but can opt out of the trial of his / her own conscious discretion.

EXCLUSION CRITERIA:

- Cardiac disease
- Diabetes mellitus

- Hypertension
- Rheumatoid arthritis
- Pregnancy and lactation
- History of trauma
- Tuberculosis
- Use of narcotic drugs
- Neurological disorder
- Patients with any other serious illness.

STUDY OF CLINICAL DIAGNOSIS:

A case sheet is prepared on the basis of siddha and modern method to diagnose the disease and individual case sheet is maintained for each patient.

SIDDHA DIAGNOSTIC TOOLS:

- Poriyal arithal
- Pulanal arithal
- Vinathal
- Mukkutram
- Ezhu udal thathugal
- Envagai Thervu
- Thinaigal
- Paruva kalangal
- Thega nilai

LABORATORY INVESTIGATIONS:

Blood	**Urine**
TC	Albumin
DC	Sugar
ESR	Deposit
Hb	

Aso titre

Radiological investigations:

X- ray of the knee joints (AP and Lat view) Improvement assessed by following assessments.

Selection of drugs:

Selection of drugs was made from the elaborate studyof various siddha literatures and finally the drugs were selected from Athma Rakcharmithamennum Vaidhya Sara Sankiragam.

The trial drugs selected are

1. Sagalavatha Chooranam as internal medicine
2. Ilagu Vadha Kesari Thylem as external medicine.

LINE OF TREATMENT

The treatment of Siddha system includes not only the removal of signs and syptoms of a disease but also in total uprootment of the diseases.

In Azhal keel vaayu the deranged vatham is brought to its normal state by purgation

"விரேசனத்தால் வாதம் தாழும்"

1. 15ml of **vellai ennai** is given with warm water early morning (single dose) in empty stomach before starting the treatment with trial drug.

2. Internal medicine

Sagala vadha chooranam-1.5gm three times/day given with water after food.

3. External medicine

Ilagu vadha kesari thylam - External application.

Apart from other department, sirappu maruthuvam department gives equal important to external therapy in siddha system of medicine along with its internal and external medicines.

EXTERNAL THERAPIES:

They are kattu, pattru, vaedhu, puravalayam, Thokkanam, ottradam, varmam, asanam etc.,

ASSESSMENT OF PROGNOSIS:

1. Clinical Assessement:

- Pain and swelling in both knee joints
- Stiffness in both knee joint
- Crepitation in joint line, medial condyle
- Tenderness in joint line, medial condyle of knee joint
- Warmth
- Periarticular atrophy
- Restricted movements of both the knee joints.

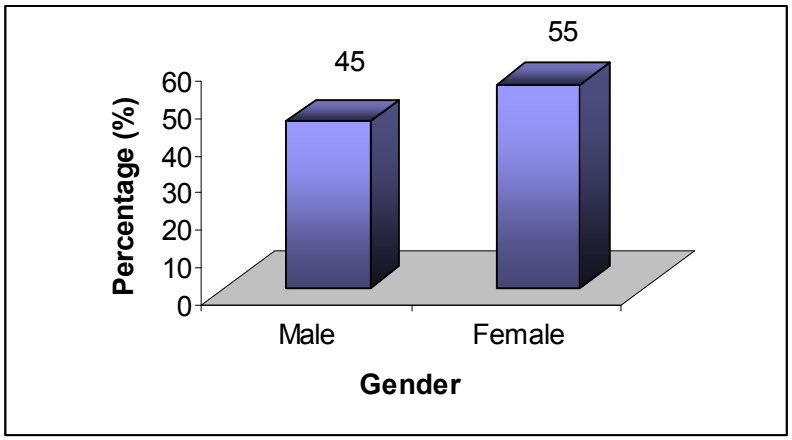
2. Radiological Assessment:

X-ray of the both knee (AP view and lateral view)

RESULTS AND OBSERVATION

1. GENDER DISTRIBUTION:

GENDER	NUMBER OF CASES	PERCENTAGE
Male	18	45
Female	22	55
Total	40	100

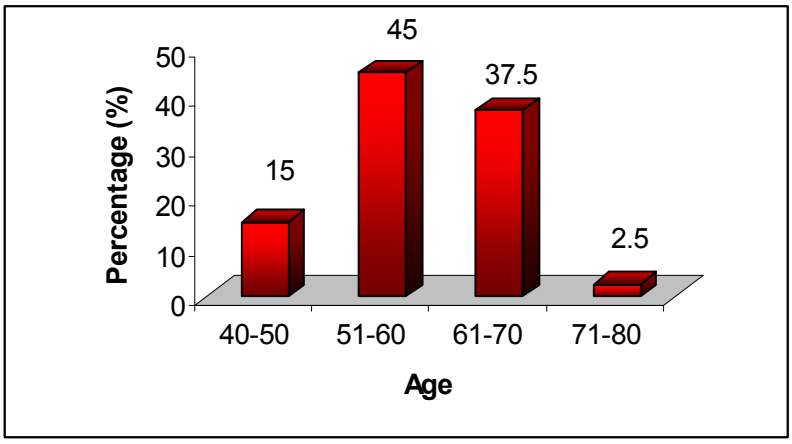


Inference:

Among the 40 patients selected for this study, 45% were males and 55% were females.

2. AGE DISTRIBUTION:

AGE (YEAR)	NUMBER OF CASES	PERCENTAGE
40-50	6	15
51-60	18	45
61-70	15	37.5
71-80	1	2.5
TOTAL	40	100

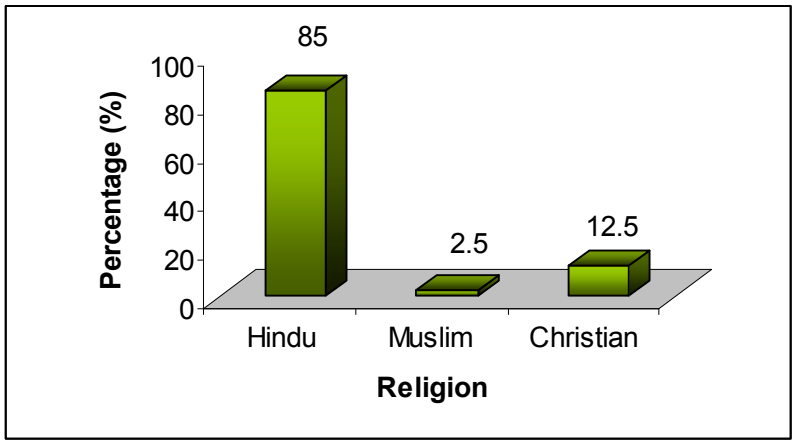


Inference:

Most of the cases were above the age group of 50.

RELIGION

RELIGION	NUMBER OF CASES	PERCENTAGE
Hindu	34	85
Muslim	1	2.5
Christian	5	12.5

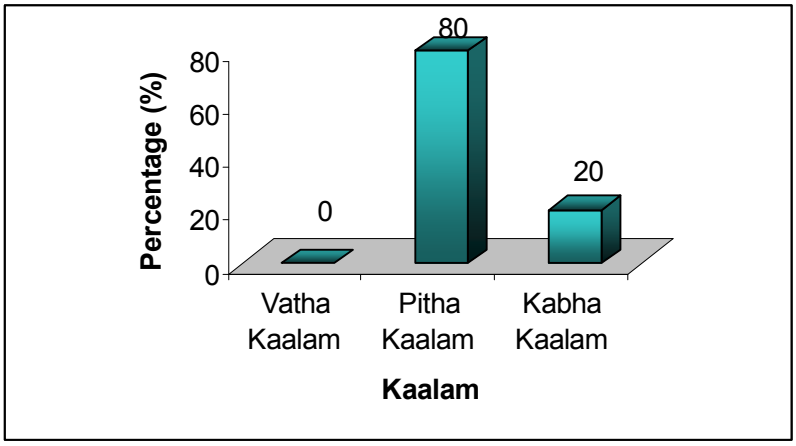


Inference:

Most of the cases were Hindu.

3. KAALAM DISTRIBUTION:

KAALAM	NUMBER OF CASES	PERCENTAGE
Vatha Kaalam (Up to 33 years)	-	-
Pitha Kaalam (33years- 66 years	32	80
Kabha Kaalam (above 66 years)	8	20
Total	40	100

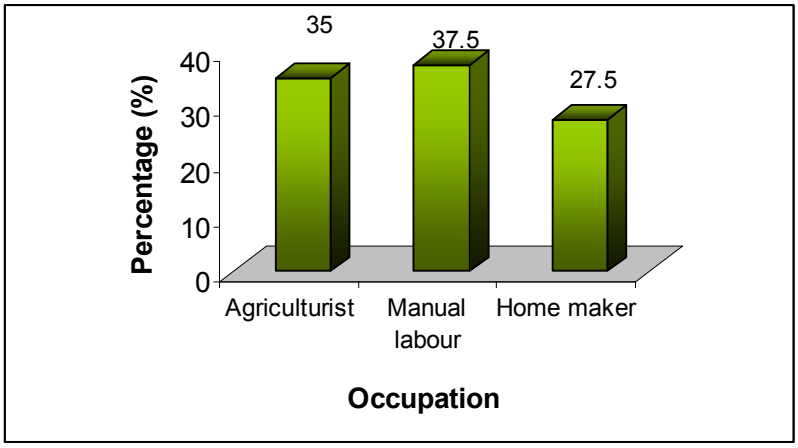


Inference:

Out of 40 cases, 80 % of the cases were found to be in Pitha kaalam, and the remaining 20% were found to be in kabha kaalam.

4. OCCUPATIONAL STATUS:

OCCUPATION	NUMBER OF CASES	PERCENTAGE
Agriculturist	14	35
Manual labour	15	37.5
Home maker	11	27.5
Total	40	100

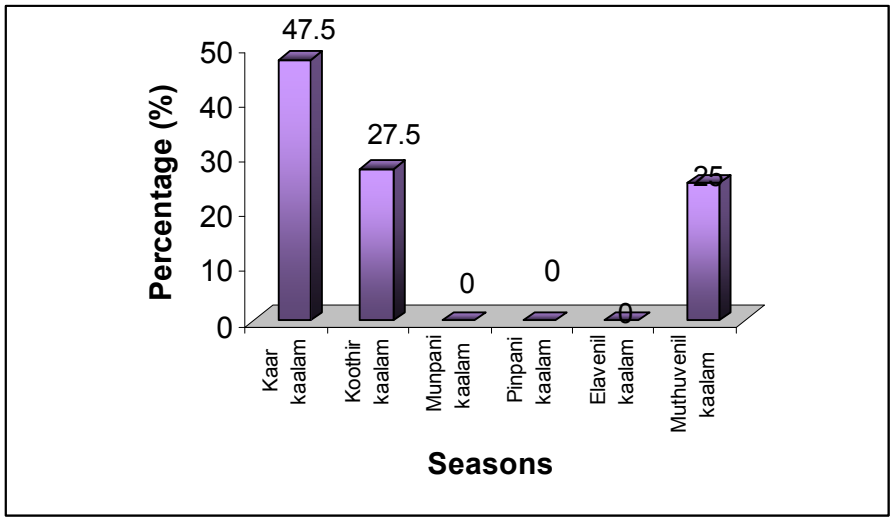


Inference:

Out of 40 cases, in this study the rate of incidence is higher in occupational group which includes home maker (27.5%) and farmer & manual labour (72.5%) groups.

5. SEASONAL VARIATIONS:

SEASONS	NUMBER OF CASES	PERCENTAGE
Kaar kaalam (Aug 16 – Oct 15)	19	47.5
Koothir kaalam (Oct 16 – Dec 15)	11	27.5
Munpani kaalam (Dec 16 – Feb15)	0	0
Pinpani kaalam (Feb 16 – Apr 15)	0	0
Elavenil kaalam (Apr 16 – June 15)	0	0
Muthuvenil kaalam (June 16 – Aug 15)	10	25
Total	40	100

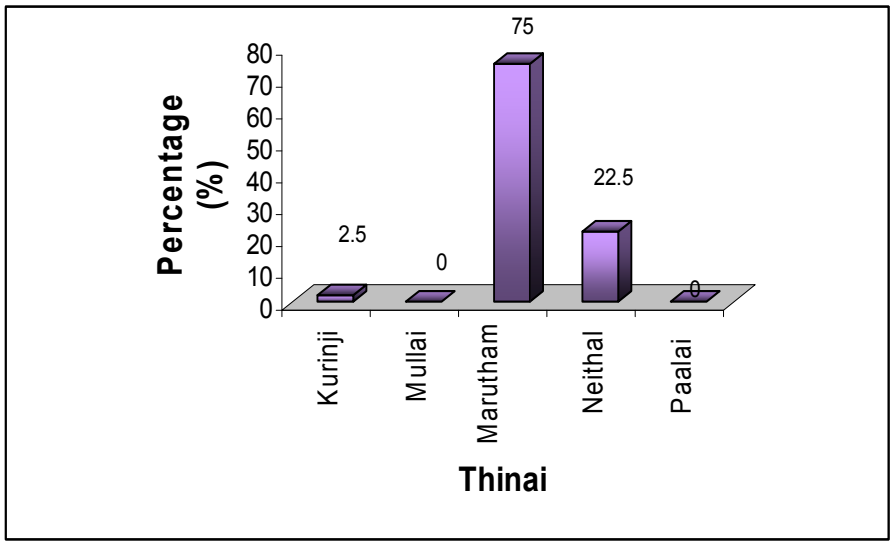


Inference:

Out of 40 cases, 19 patients (47.5%) were admitted in Kaar Kaalam, 11 patients (27.5%) were admitted in koothir kalam and 10 patients (25%) were admitted in Muthuvenil Kaalam.

6. THINAI:

THINAI	NO OF CASES	PERCENTAGE
Kurinji (Hill Area)	1	2.5
Mullai (Forest Area)	0	0
Marutham (Fertile Land)	30	75
Neithal (Coastal Area)	9	22.5
Paalai (Desert Land)	0	0
Total	40	100

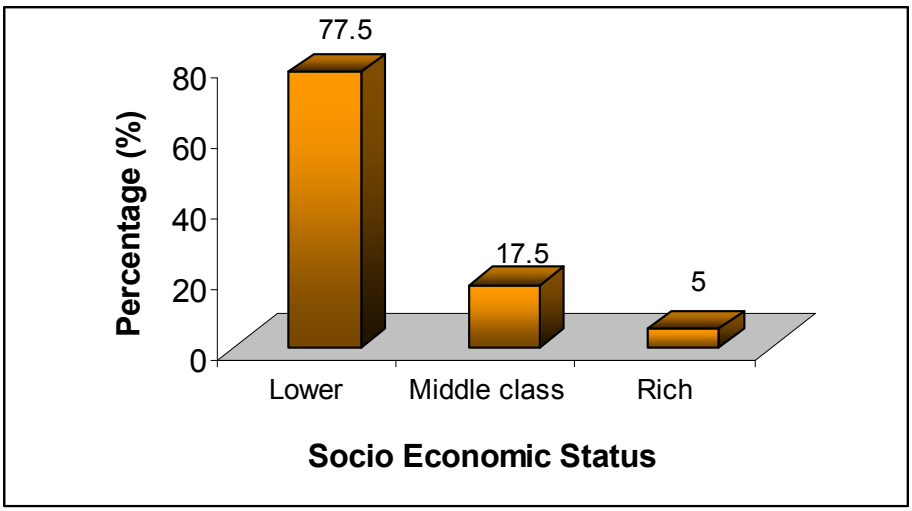


Inference:

Among the 40 patients, 1 patient (2.5 %) was from Kurinji, 30 (75%) cases were from Marutham and 9 (22.5 %) cases were from Neithal thinai.

7. SOCIO- ECONOMIC STATUS:

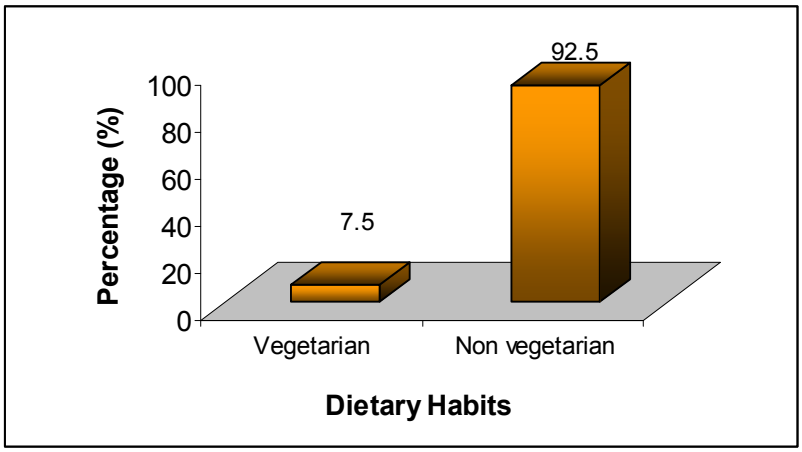
CLASS	NUMBER OF CASES	PERCENTAGE
Lower	31	77.5
Middle class	7	17.5
Rich	2	5
Total	40	100



Inference: Out of 40 cases 77.5% of cases were lower class, 17.5 % cases were from middle class and the remaining 5% were rich.

8. DIETARY HABITS

Dietary Habits	No of Cases	Percentage
Vegetarian	3	7.5
Non vegetarian	37	92.5

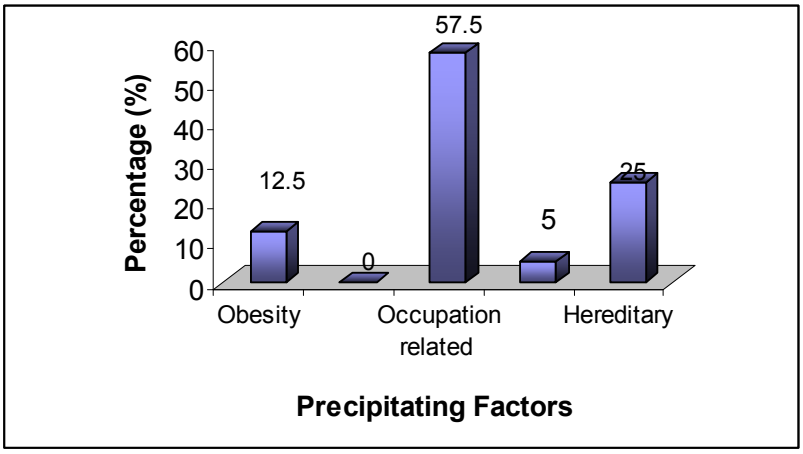


Observation:

All the cases except three were mixed diet.

9. PRECIPITATING FACTORS:

PRECIPITATING FACTORS	NO OF CASES	PERCENTAGE
Obesity	5	12.5
Menopause	0	0
Occupation related (over use of the joint)	23	57.5
H/o trauma	2	5
Hereditary	10	25

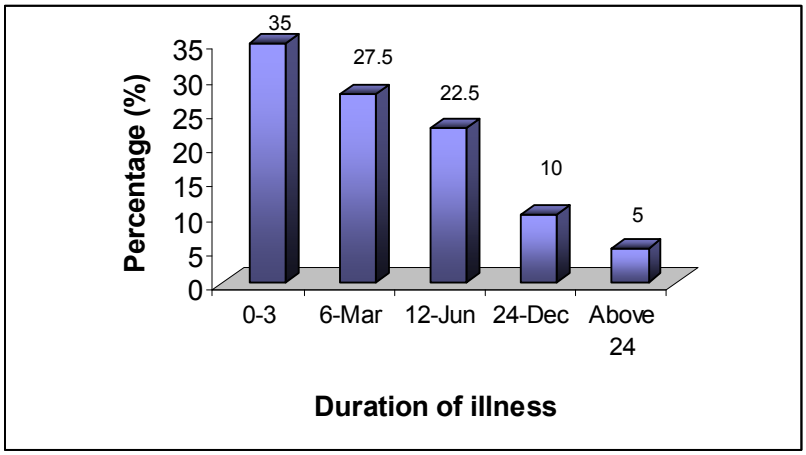


Inference:

Among the 40 patients, 5 of them (12.5%) were overweight, 23 of them (57.5 %) had the history of over use of the joint and 7 (17.5 %) of them were in the post menopausal stage.

DURATION OF ILLNESS

DURATION (MONTHS)	NO. OF CASES	PERCENTAGE
0-3	14	35
3-6	11	27.5
6-12	9	22.5
12-24	4	10
Above 24	2	5

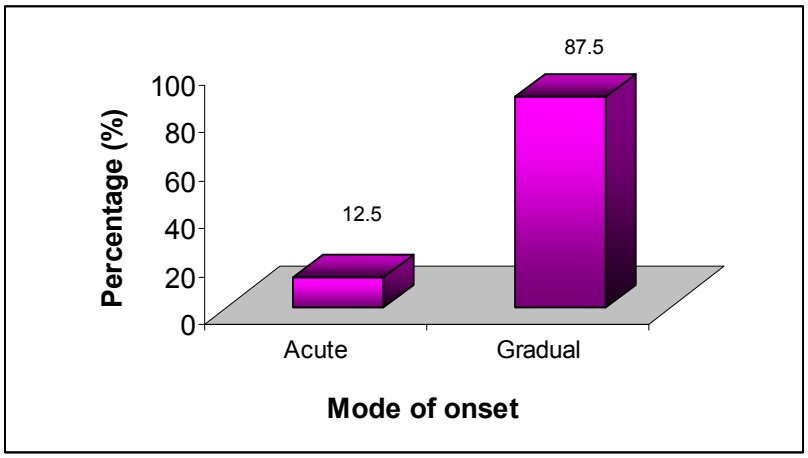


Inference

Among the 40 cases most of them had the duration of illness – upto 1 year.

10.MODE OF ONSET:

MODE OF ONSET	NO. OF CASES	PERCENTAGE
Acute	5	12.5
Gradual	35	87.5

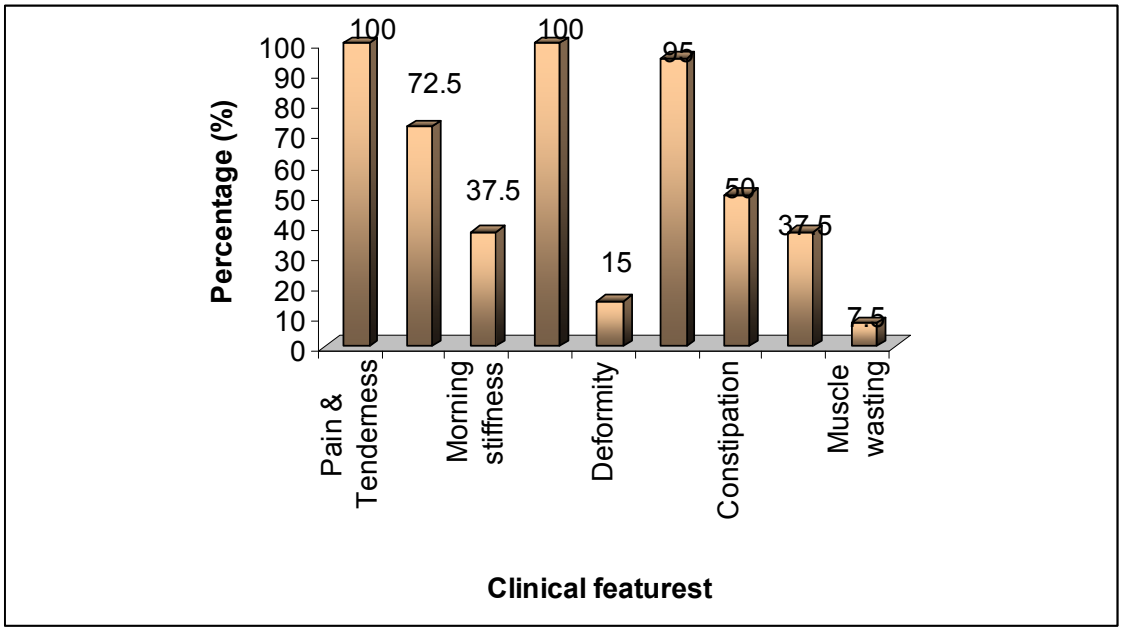


Inference:

According to this study 87.5% of cases were reported gradual onset of disease.

11. CLINICAL FEATURES:

CLINICAL FEATURES	NO. OF CASES	PERCENTAGE
Pain & Tenderness	40	100
Swelling	29	72.5
Morning stiffness	15	37.5
Crepitations	40	100
Deformity	6	15
Restricted movements	38	95
Constipation	20	50
Sleeplessness	15	37.5
Muscle wasting	3	7.5



Inference:

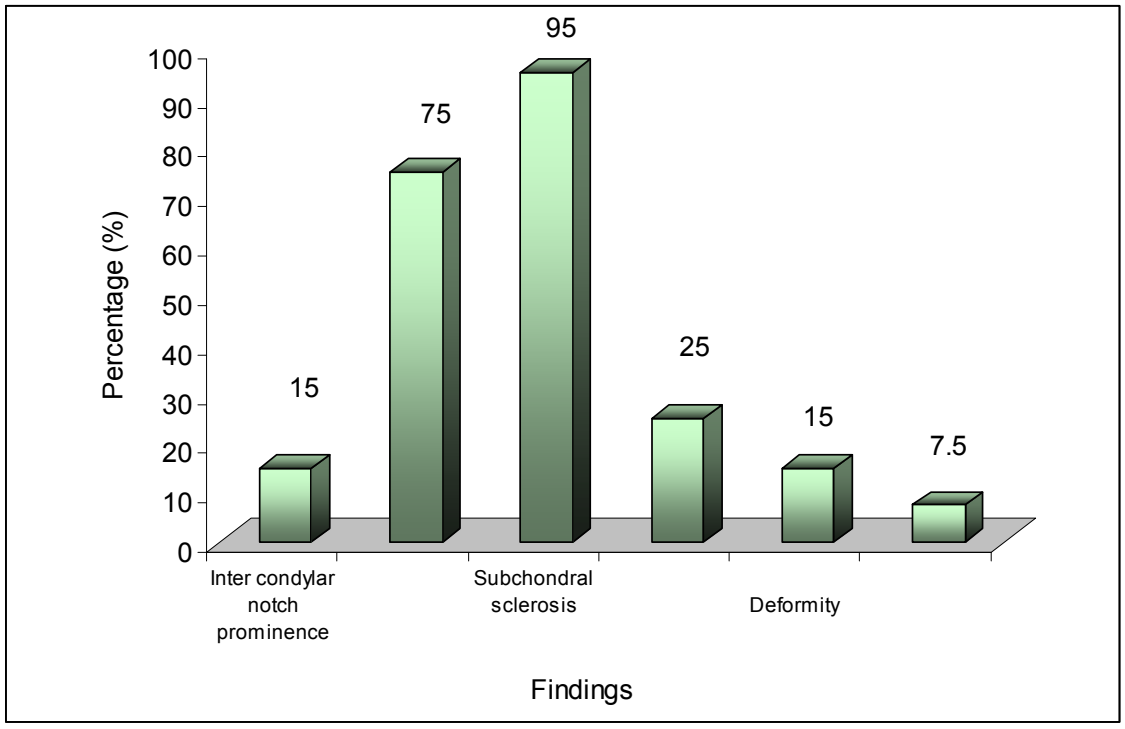
Among the forty cases all of them had pain, tenderness, crepitations and restricted movements. 29 patients had swelling and 15 patients had morning stiffness.

MEASUREMENTS OF THE KNEE JOINTS

S.No	Patient Name	Age/ sex	OP/IP No	Before treatment		After treatment	
				Right (cm)	Left (cm)	Right (cm)	Left (cm)
1	Mary	60/F	56197	32	32	31	31
2	Senthil arumugam	59/F	69330	35	34.5	34	34
3	Gowri	52/F	71707	34	33	32	32
4	Saraswathi	60/F	65682	33	33.5	32	32
5	Pushpam	65/F	59255	35	35	35	34.5
6	Shanmugavel	62/M	73154	34	34.5	34	34
7	Servarayan	55/M	68070	35	35	35	35
8	Kallathiyan	63/M	58435	35	35	34	34.5
9	Komathi	60/F	66916	33	33.5	33	33
10	Shanmugavel	65/M	67915	34	34.5	34	34
11	Selvi	67/F	2405	34	34	33	33
12	Nachiyar	50/F	2332	33	35	33	34.5
13	Govindan	55/M	2794	39	40	39	39
14	Ramalakshmi	60/F	2965	35	35	35	34
15	Sathya	68/M	3263	39	40	39	39
16	Ponnuthai	45/F	3103	35	34	36	34
17	Maryammal	55/F	3109	36	35	35	34
18	Pathlamuthu	57/M	4008	36	37	36	36
19	Nambi	70/M	3960	31	32	31	31
20	Muthu	56/M	4185	35	36	35	35

14. TABLE SHOWING RADIOLOGICAL FINDINGS:

FINDINGS	NO. OF CASES	PERCENTAGE
Joint space narrowing	38	95
Inter condylar notch prominence	6	15
Presence of osteophytes	30	75
Subchondral sclerosis	38	95
Osteoporosis	10	25
Deformity	6	15
Soft tissues swelling	3	7.5

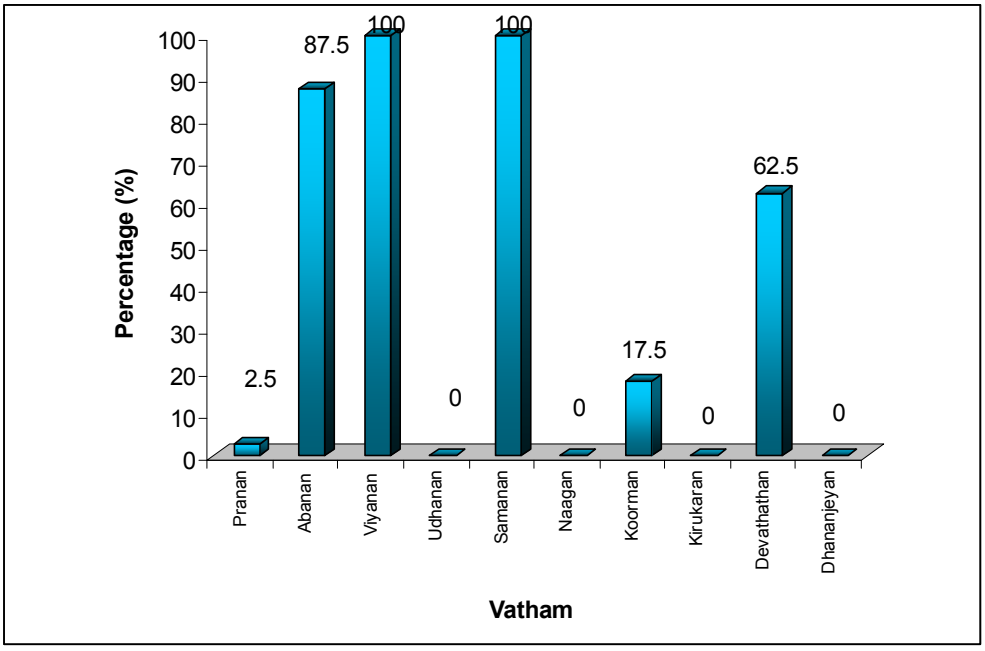


Inference:

Joint Space narrowed in 38 cases (95%), Osteophytes present in 30 cases (75%), Subchondral sclerosis present in 38 cases (95%), Osteoporosis present in 10 cases (25%).

14. TABLE SHOWING THE DERANGEMENT OF VATHAM:

VATHAM	NO. OF CASES	PERCENTAGE
Pranan	1	2.5
Abanan	35	87.5
Viyanan	40	100
Udhanan	0	0
Samanan	40	100
Naagan	0	0
Koorman	7	17.5
Kirukaran	0	0
Devathathan	25	62.5
Dhananjeyan	0	0

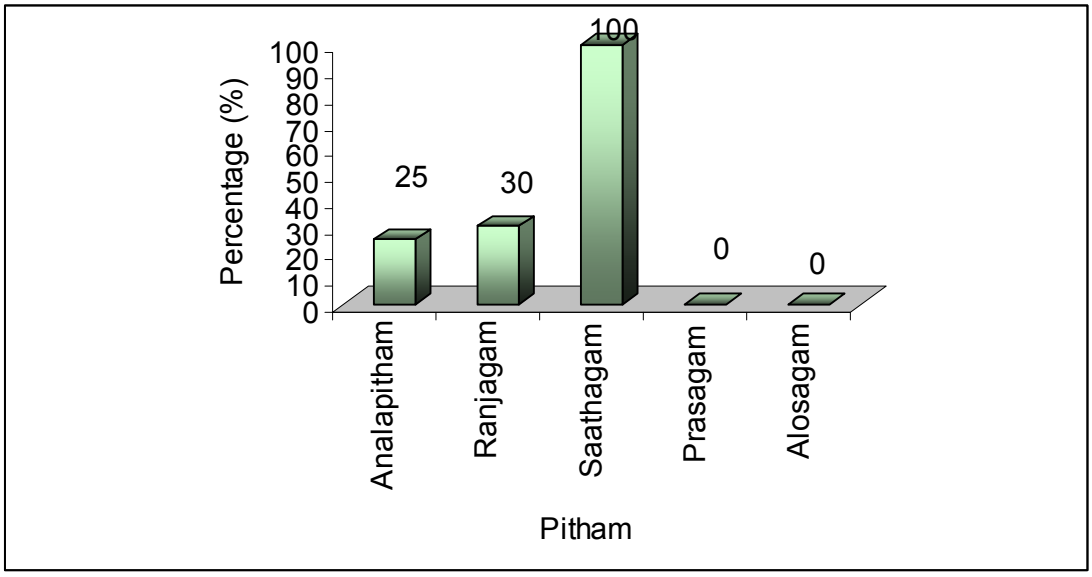


Inference:

Viyanan and Samanan were affected in all the 40 cases (100%), Abanan was affected in 35 cases (87.5%),Devathathan was affected in 24 cases (62.5%), Koorman was affected in 7 cases (17.5%) and pranan was affected in 1 cases (2.5%).

15. DISTUBRANCES IN PITHAM:

PITHAM	NO. OF CASES	PERCENTAGE
Analapitham	10	25
Ranjagam	12	30
Saathagam	40	100
Prasagam	0	0
Alosagam	0	0

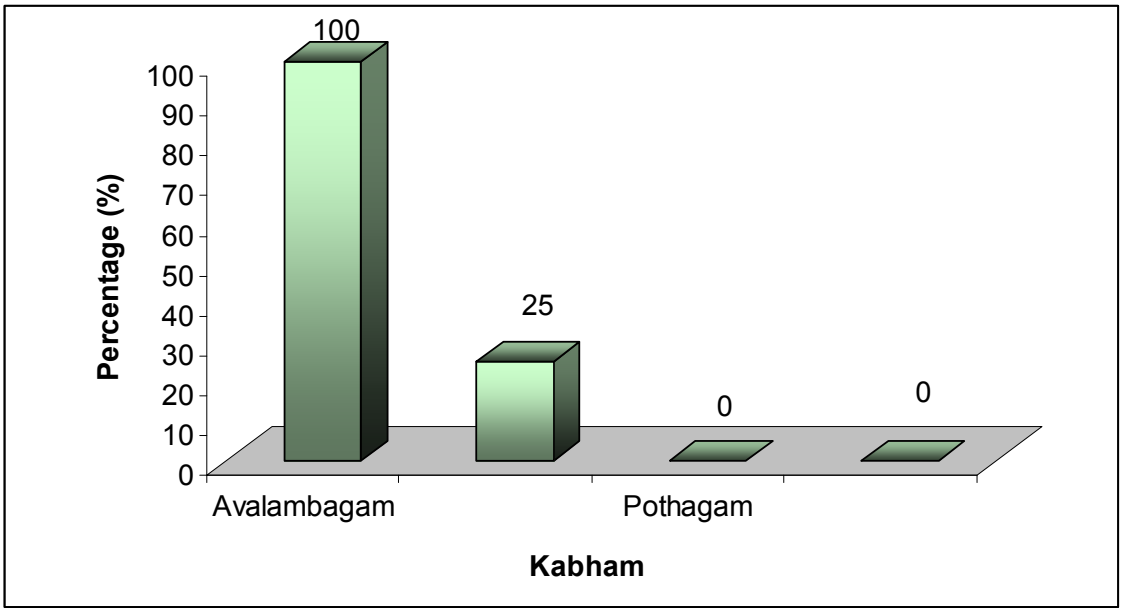


Inference:

Saathaga Pitham was affected in all 40 cases (100%), ranjaga pitham was affected in 12 cases (30%) and Analpitham was affected in 10 cases (25%).

16. TABLE SHOWING THE DERANGEMENT OF KABHAM:

KABHAM	NO. OF CASES	PERCENTAGE
Avalambagam	40	100
Kilethagam	10	25
Pothagam	0	0
Tharpagam	0	0
Santhigam	40	100

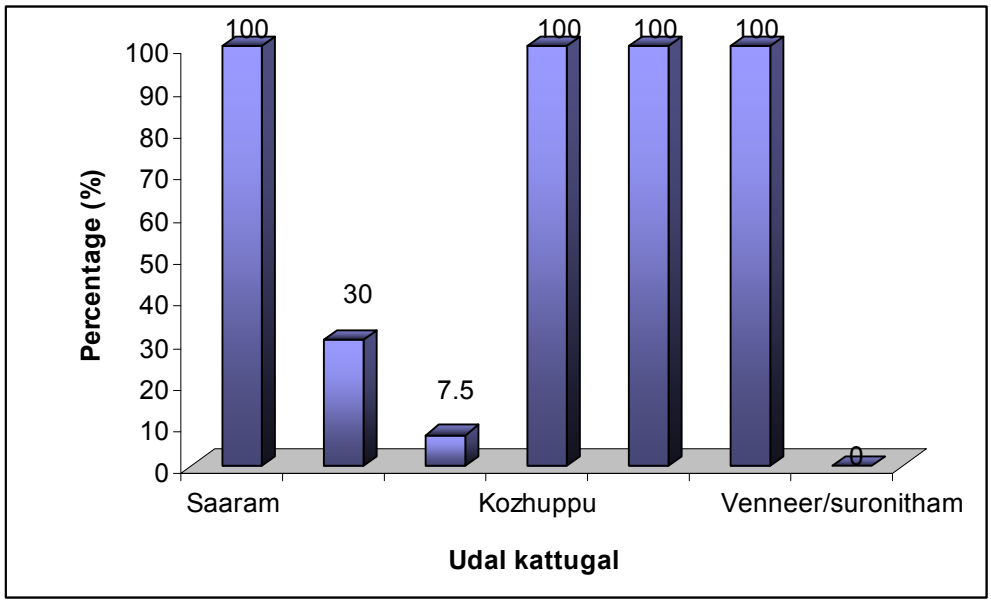


Inference:

In all the 40 cases (100%) Santhigam was affected and so Avalambagam was also affected. 10 cases kilethagam was affected.

17. TABLE SHOWING THE CONDITION OF UDAL KATTUGAL:

UDAL KATTUGAL	NO. OF CASES	PERCENTAGE
Saaram	40	100
Senneer	12	30
Oon	3	7.5
Kozhuppu	40	100
Enbu	40	100
Moolai	40	100
Venneer/suronitham	0	0



Inference:

In all the cases Saaram, Kozhuppu and Enbu were affected (100%) and Senneer was affected in 12cases (30%). Oon was affected in 3 cases (7.5%).

18. ENNVAGAI THERVUGAL:

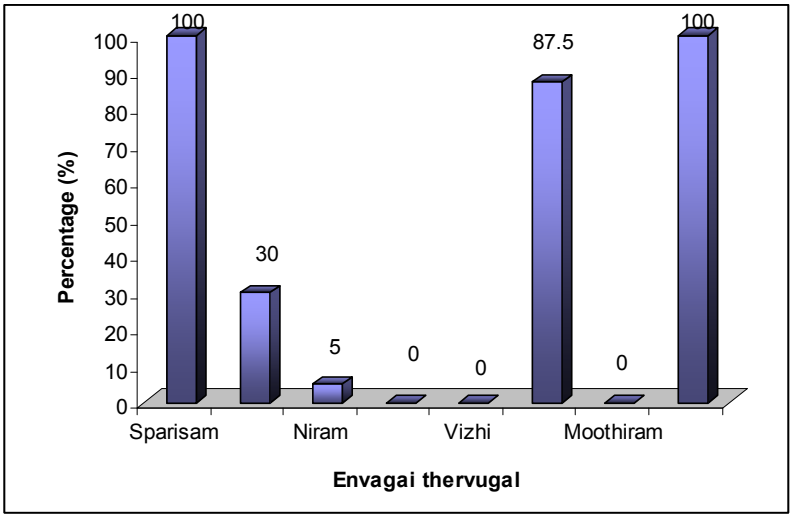
ENNVAGAI THERVUGAL	NO. OF CASES	PERCENTAGE
Sparisam	40	100
Naa	12	30
Niram	2	5
Mozhi	0	0
Vizhi	0	0
Malam	35	87.5
Moothiram	0	0
Naadi	40	100

Naadi

Pitha Vatham 20 cases (50%)
Vatha Pitham 15 cases (37.5%)
Pitham Kabham 5 cases (12.5%)

Neikuri

Snake in ring 15 (37.5%)
Ring in snake 20 (50%)
Ring in pearl 5 (12.5%)

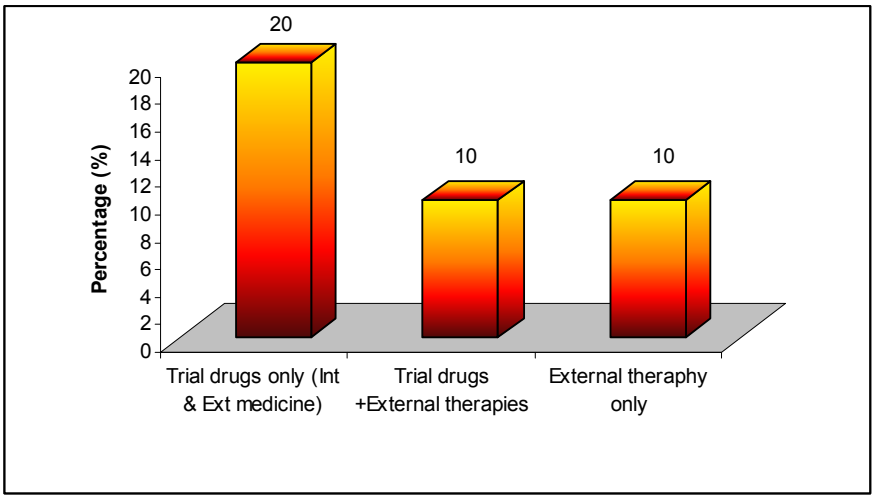


Inference:

Sparisam was affected in all the 40 cases, Naa was affected in 12 cases (30%), Malam was affected in 35 cases (87.5%). Niram was affected in 2 case (5%).

19. SELECTION OF PATIENTS:

TREATMENT OPTIONS	NO OF PATIENTS
Trial drugs only (Int & Ext medicine)	20
Trial drugs +External therapies (Int & Ext medicine)	10
External theraphy only	10



Inference:

This Clinical study includes 40 Patients, i.e. 20 from IP ward and 20 Patients from OP ward. 20 OP patients were given both Internal and External medicines, 10 IP cases were given Internal, External medicine along with external therapy 10 IP cases, were given only External therapy.

20. ASSESSMENT OF RESULTS:

OUTCOME ASSESSMENT SCALE:

Clinical efficacy of the trial drugs were assessed by the following scales

Universal pain assessment scale (Mccaffiry et al., 1993)

a) 0 - No pain

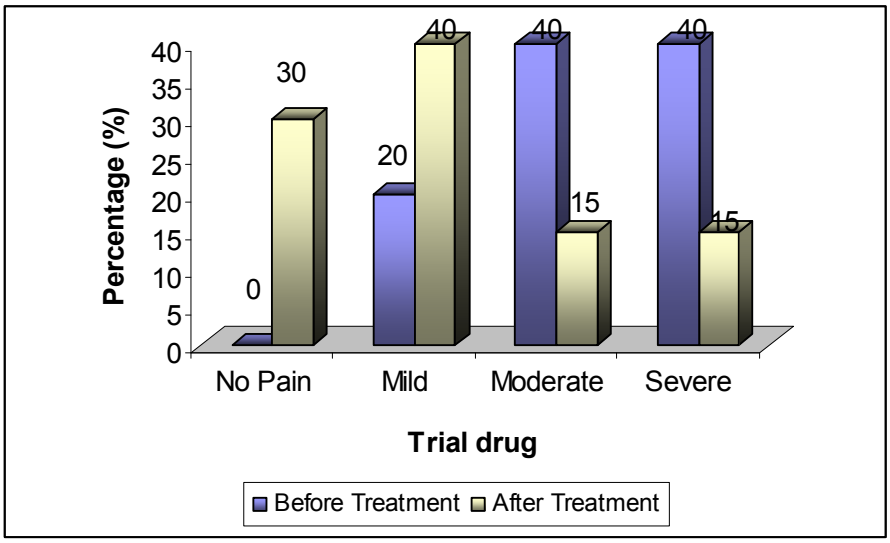
b) 1-3 - Mild Pain

c) 4-6 - Moderate Pain

d) 7-10 - Severe Pain

A). ASSESSMENT OF CURATIVE EFFECTS IN KNEE OSTEOARTHRITIS PATIENTS TREATED ONLY WITH TRIAL DRUGS:(INTERNAL AND EXTERNAL MEDICINES)

SYMPTOMS	INITIAL READINGS		FINAL READINGS	
	NO OF PATIENTS	PERCENTAGE	NO OF PATIENTS	PERCENTAGE
No Pain	0	0	6	30
Mild	4	20	8	40
Moderate	8	40	3	15
Severe	8	40	3	15



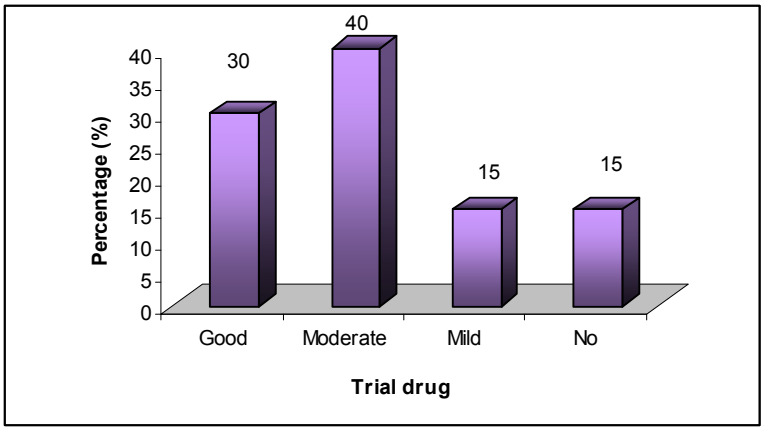
Inference:

Among the patients who were selected for treating alone with trial drugs, 8 of them had severe symptoms, 8 had moderate symptoms, and the remaining 4 patients had mild symptoms. But after treatment only 3 had severe symptoms, 3 had moderate symptoms, 8 had mild symptoms and 6 had no clinical manifestations.

B). EFFECT OF TRIAL DRUG ALONE:

Effect of therapy is assessed from the above tabulated data.

Effect of the Therapy	No. of Patients	Percentage
Good	6	30
Moderate	8	40
Mild	3	15
No	3	15

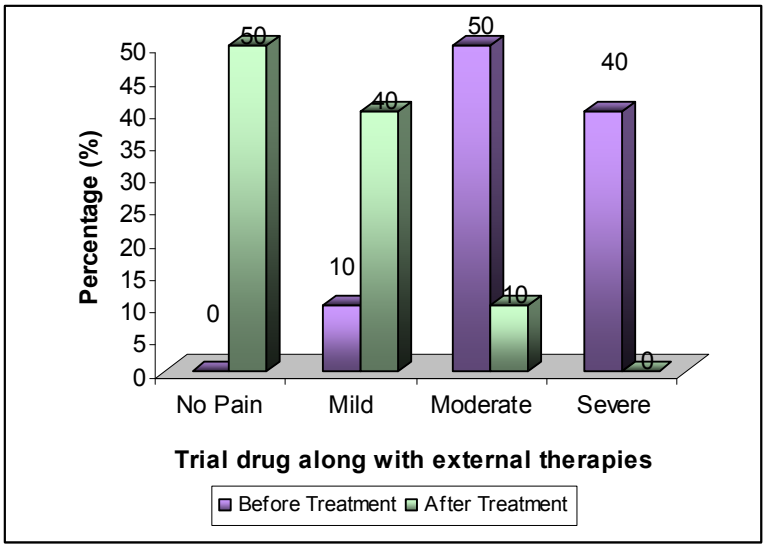


Inference:

By treating alone with trial drugs, 30% of patients had good improvement, 40% of patients had moderate improvement, 15% had mild improvement, and 15% had no improvement.

C). ASSESSMENT OF CURATIVE EFFECTS IN OSTEOARTHRITIS PATIENTS TREATED WITH TRIAL DRUGS ALONG WITH EXTERNAL THERAPIES.

SYMPTOMS	INITIAL READINGS		FINAL READINGS	
	NO. OF PATIENTS	PERCENTAGE	NO. OF PATIENTS	PERCENTAGE
No Pain	0	0	5	50
Mild	1	10	4	40
Moderate	5	50	1	10
Severe	4	40	0	0

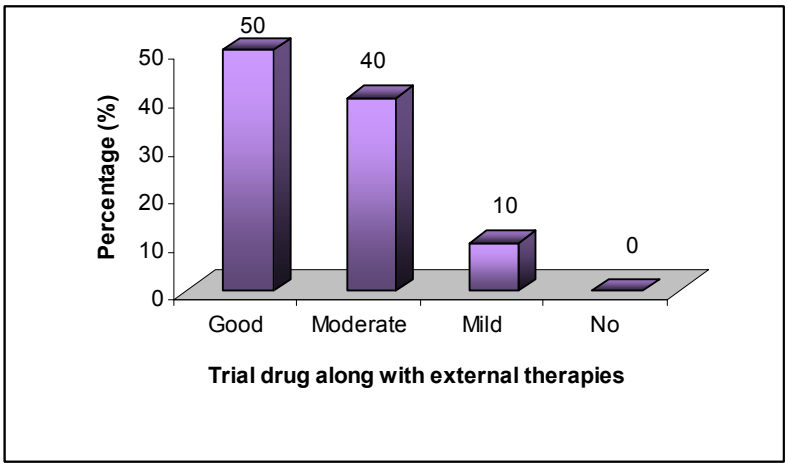


Inference:

Among the patients who were selected for treating both with trial drugs and external therapies, 4 of them had severe symptoms, 5 had moderate symptoms, and the remaining 1 patient had mild symptoms. But after treatment 5 had no clinical manifestations, 4 had only mild symptoms and the remaining 1 had moderate symptoms. No cases reported to have severe symptoms.

D). EFFECT OF TRIAL DRUG ALONG WITH EXTERNAL THERAPIES:

EFFECT OF THERAPY	NO. OF PATIENTS	PERCENTAGE
Good	5	50
Moderate	4	40
Mild	1	10
No	0	0



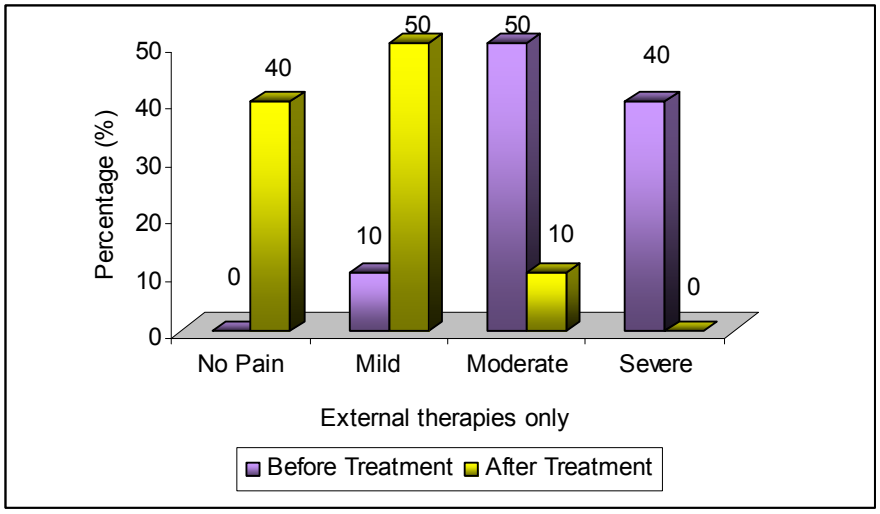
Inference:

By treating both with trial drugs and external therapies, 50% of patients had good improvement, 40% of patients had moderate improvement and 10 % only had mild improvement. None were reported to have nil prognosis.

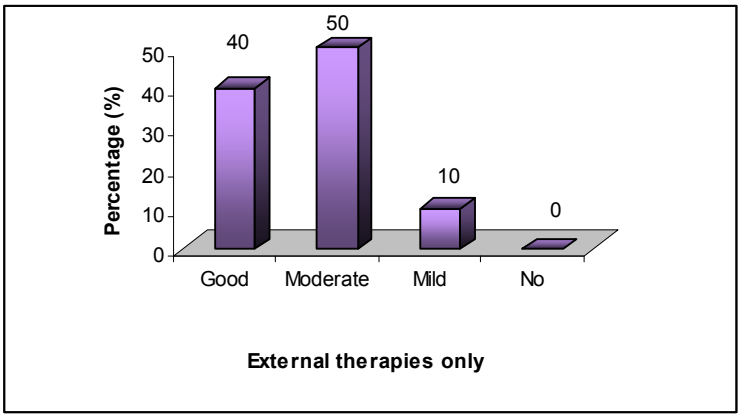
C). ASSESSMENT OF CURATIVE EFFECTS IN OSTEOARTHRITIS PATIENTS TREATED EXTERNAL THERAPIES ONLY.

SYMPTOMS	INITIAL READINGS		FINAL READINGS	
	NO. OF PATIENTS	PERCENTAGE	NO. OF PATIENTS	PERCENTAGE
No Pain	0	0	4	40
Mild	1	10	5	50
Moderate	5	50	1	10
Severe	4	40	0	0

Among the patients who were selected for treating external therapies only, 4 of them had severe symptoms, 5 had moderate symptoms, and the remaining 1 patient had mild symptoms. But after treatment 4 had no clinical manifestations, 5 had only mild symptoms and the remaining 1 had moderate symptoms. No cases reported to have severe symptoms.

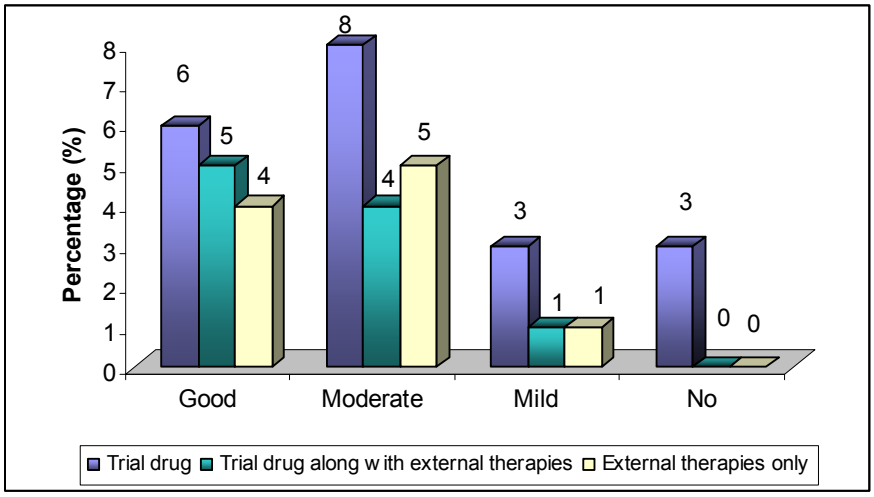


EFFECT OF THERAPY	NO. OF PATIENTS	PERCENTAGE
Good	4	40
Moderate	5	50
Mild	1	10
No	0	0



By treating external therapies only, 40% of patients had good improvement, 50% of patients had moderate improvement and 10 % only had mild improvement. None were reported to have nil prognosis.

E). COMPARISON BETWEEN EFFECTIVE OF TRIAL DRUG AND TRIAL DRUG WITH COMPLEMENTARY THERAPIES:



F). OVERALL RESULTS AFTER TREATMENT:

Based on outcome, effects after treatment was classified into 4 grades as

MARKED EFFECT:

No longer any clinical manifestations.

Patient could work and live normally.

No recurrence after some months.

MODERATE EFFECT:

Moderate reduction of manifestations.

Slight pain after movement.

MILD EFFECT:

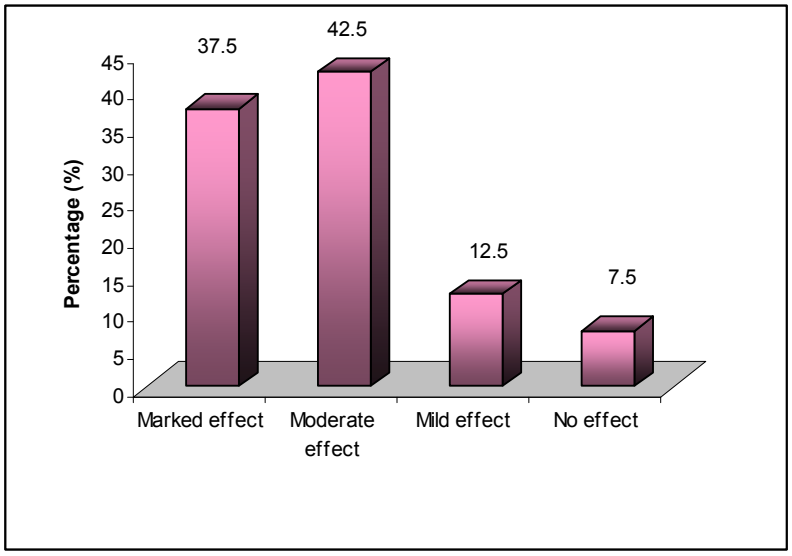
Slight reduction in the clinical manifestation.

With relapse.

NO EFFECT:

No reduction of pain and tenderness.

EFFECT OF THERAPY	NO. OF CASES	PERCENTAGE
Marked effect	15	37.5
Moderate effect	17	42.5
Mild effect	5	12.5
No effect	3	7.5



Inference:

Out of 40 cases, marked improvement was observed in 37.5 % patients, moderate improvement in 42.5 % patients, mild improvement in 12.5 % patients and no improvement was observed in 7.5 % patients.

OP AND IP CASES CLINICAL IMPROVEMENT

Sl. No	OP & IP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
1	58435	Kallathiyan	63	M	01/08/12	06/09/12	44	MARKED
2	54678	Jansi rani	58	F	19/07/12	27/08/12	36	MARKED
3	55530	Saravanan	49	M	23/07/12	23/08/12	38	MODERATE
4	74470	Velu	63	M	22/09/12	15/10/12	30	MODERATE
5	67975	Shanmugavel	65	M	03/09/12	10/10/12	44	MODERATE
6	68415	Ameer sulthan	50	F	04/09/12	28/09/12	31	MODERATE
7	66916	Komathi	60	F	30/08/12	25/09/12	32	MARKED
8	68070	Saervarayan	55	M	03/09/12	20/09/12	26	MILD
9	73154	Shanmuga vel	62	M	18/09/12	12/10/12	30	MARKED
10	57823	Rajan	66	M	30/07/12	29/08/12	37	MODERATE
11	78554	Sivaraman	60	M	06/10/12	12/12/12	73	MARKED
12	58746	Muthammal	60	F	02/08/12	25/08/12	30	MODERATE
13	65412	Mariammal	62	F	25/08/12	10/09/12	24	MILD
14	59255	Pushpam	65	F	04/08/12	17/08/12	20	NO
15	65682	Saraswathy	60	F	25/08/12	15/09/12	27	MILD
16	71707	Gowri	52	F	13/09/12	05/11/12	60	MARKED
17	56197	Meri	60	F	25/07/12	15/09/12	57	MARKED
18	69330	Senthil Arumugam	59	F	06/09/12	17/10/12	50	MARKED
19	82518	Annammal	54	F	16/10/12	30/10/12	21	NO
20	88896	Kodimuthu	65	M	06/11/12	22/11/12	23	NO

OP AND IP CASES CLINICAL IMPROVEMENT

Sl. No	OP & IP NO	NAME	AGE	SEX	DOA	DOD	TREATED DAYS	RESULT
21	2405	Selvi	67	F	25/07/12	28/08/12	34	MARKED
22	2455	Dhanam	68	F	27/07/12	22/08/12	26	MODERATE
23	2332	Nachiyar	50	F	19/07/12	08/08/12	20	MILD
24	2794	Govindan	55	M	23/08/12	20/09/12	28	MARKED
25	2965	Ramalakshmi	60	F	07/09/12	28/09/12	21	MODERATE
26	3263	Sathya	68	M	27/09/12	20/10/12	23	MARKED
27	3103	Ponnuthai	45	F	18/09/12	15/12/12	28	MODERATE
28	3461	Thavamani	52	F	08/10/12	30/10/12	22	MARKED
29	3432	Thangakani	70	F	05/10/12	25/10/12	20	MODERATE
30	3105	Veerammal	48	F	19/10/12	15/11/12	26	MARKED
31	3109	Meriammal	55	F	19/09/12	05/11/12	48	MODERATE
32	3660	Vembu	55	M	25/10/12	15/11/12	20	MARKED
33	3755	Palani	80	M	02/11/12	25/11/12	23	MODERATE
34	4008	Pathalamuthu	57	M	23/11/12	20/12/12	27	MARKED
35	3960	Nambi		M	20/11/12	12/12/12	22	MODERATE
36	4042	Ramuthai	19	F	26/11/12	20/12/12	24	MODERATE
37	4004	Baburao	67	M	23/11/12	18/12/12	25	MILD
38	3961	Packiam	67	F	20/11/12	12/12/12	22	MARKED
39	4185	Muthu	56	M	06/12/12	30/12/12	24	MARKED
40	3820	Kanagaraj		M	09/11/12	28/11/12	20	MODERATE

BLOOD INVESTIGATIONS BEFORE AND AFTER TREATMENT- OP & IP PATIENTS

S. NO	0P/IP NO	TC		DC								ESR		Bl.Sugar				Bl.Urea		Se. Cr	
				N		L		E		HB		BT	AT	F		PP		BT	AT	BT	AT
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT			BT	AT	BT	AT				
1.	54678	8500	8700	58	60	37	37	5	2	11	12	30/60	20/40	70	72	90	100	20	25	0.3	0.2
2.	56197	8000	8200	61	60	37	35	2	2	10	10	12/27	10/20	85	87	140	130	17	18	0.3	0.7
3.	55530	8500	8300	60	62	35	34	5	3	13	14	7/18	7/20	80	82	100	110	25	23	0.3	0.4
4.	58435	7700	7800	66	58	32	30	2	2	10.8	11	22/45	15/30	90	97	129	125	30	25	0.5	0.4
5.	69330	7900	8000	69	66	28	30	3	3	10	11	20/45	20/40	71	75	110	100	19	20	0.7	0.5
6.	71707	7900	8100	70	64	40	42	3	-	12	13	40/80	30/60	88	80	130	135	17	19	0.6	0.5
7.	67975	8700	8500	66	68	31	35	4	2	10.5	11	11/23	15/30	86	88	86	90	48	43	0.7	0.8
8.	74470	8100	8000	65	67	30	33	3	4	11.5	12	10/20	7/15	70	75	100	92	23	25	0.6	0.7
9.	68415	9800	9500	58	60	39	40	3	3	11	11.5	10/20	5/10	73	85	95	100	29	30	0.7	0.5
10.	73154	9600	9700	58	62	39	35	3	2	11	12	20/40	10/20	88	90	110	105	18	20	0.3	0.4
11.	57823	7500	7800	41	45	25	35	4	2	11.5	12	17/35	20/40	100	88	160	150	20	25	0.8	0.9
12.	78554	9200	9500	54	50	43	40	3	3	11.9	11.5	5/10	10/20	80	90	100	120	25	30	0.5	0.6
13.	58746	8500	8700	60	65	40	42	4	3	9	10	20/35	20/45	80	86	110	120	30	25	0.8	0.7
14.	65412	8600	8800	57	60	33	35	3	2	10	9	10/20	20/40	75	80	130	110	17	20	0.5	0.6
15.	59255	7800	8000	65	60	40	35	4	2	12	12	20/35	30/60	80	90	120	130	25	28	0.3	0.7
16.	65682	9600	9200	70	60	37	35	5	3	9	10	23/44	28/45	90	100	110	100	17	20	0.6	0.5
17.	66916	9600	9200	60	58	35	30	4	2	10	11	15/30	20/40	80	90	110	120	20	25	0.3	0.5
18.	68070	8500	8700	58	60	32	35	2	3	11	10	17/33	25/50	85	80	100	120	28	30	0.5	0.3
19.	82518	9000	9200	70	68	28	33	4	2	9	10	35/60	30/60	80	90	130	125	30	35	0.7	0.8
20.	88896	8500	8700	72	65	30	35	3	2	9.5	10.5	20/40	25/48	70	80	100	110	25	23	0.5	0.6

BLOOD INVESTIGATIONS BEFORE AND AFTER TREATMENT – OP & IP PATIENTS

URINE AND MOTIONS EXAMINATION BEFORE AND AFTER TREATMENT – OP & IP PATIENTS0.

S. NO	IP. NO	TC		DC								ESR		Bl. Sugar				Bl. Urea		Se. Cr	
				N		L		E		HB				F		PP					
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	2405	7000	7800	59	68	39	30	2	1	10.5	11	15/34	20/40	82	80	89	100	23	28	0.6	0.4
22.	2455	7900	7500	66	70	30	32	4	3	9	9.5	19/40	15/35	90	85	130	140	19	26	0.8	0.7
23.	2332	8000	8200	60	67	35	40	5	3	9.5	10	15/30	20/45	80	85	100	110	24	27	0.4	0.6
24.	2794	9800	9500	60	72	37	35	3	2	13	13.5	12/24	13/28	85	90	110	120	28	25	0.9	0.8
25.	2965	8000	7900	61	56	37	30	2	2	10.5	11	13/30	20/45	80	85	120	125	28	30	0.8	0.7
26.	3263	9800	9200	65	60	29	34	6	5	13.3	13	12/25	15/30	75	80	110	120	49	38	0.9	0.6
27.	3103	6800	7400	60	70	36	30	6	3	10.5	11	22/44	20/40	70	74	101	107	17	23	0.3	0.5
28.	3461	9600	8800	60	62	39	42	1	2	11.6	12	11/21	20/40	80	85	120	127	30	35	0.6	0.7
29.	3432	9000	8800	58	60	35	40	3	1	10	10.5	10/20	13/33	70	75	110	100	19	23	0.5	.08
30.	3109	8600	9000	60	65	32	38	4	2	11.3	11.8	11/25	22/40	75	80	100	90	23	25	0.4	0.6
31.	3660	9800	9200	70	65	30	35	4	3	12	11.5	20/40	19/25	60	80	110	130	26	28	0.6	0.5
32.	3755	7600	8000	62	65	28	33	5	2	10.8	11	17/33	22/45	78	85	100	110	28	30	0.5	0.4
33.	3105	8000	8500	60	65	38	40	3	1	9.8	10	22/40	17/30	68	70	100	105	24	26	0.6	0.7
34.	4008	7700	7900	66	64	30	35	4	1	11.5	12	3/7	10/20	80	90	130	135	29	32	0.6	0.7
35.	3960	9500	8800	69	72	20	28	1	2	9.6	10.2	28/60	20/40	80	85	110	120	42	38	0.6	0.7
36.	4042	8300	8800	67	70	30	25	3	2	10	10.5	40/80	45/80	70	75	120	128	37	40	0.9	0.6
37.	4004	8700	9000	70	72	28	32	4	2	10.3	10.8	45/88	40/80	80	85	110	115	40	42	0.4	0.6
38.	3961	8800	9000	64	58	30	34	3	1	9.8	10.2	10/20	7/15	60	70	85	90	19	22	0.3	0.5
39.	4185	6700	7200	65	70	29	32	6	3	12	11.8	4/9	10/20	70	75	85	90	28	30	0.8	0.9
40.	3820	6200	7000	70	62	35	28	5	3	12.5	12.8	9/18	20/40	88	85	98	107	25	23	0.6	0.7

S. NO	IP NO	URINE								MOTION					
		Before Treatment				After Treatment				Before Treatment			After Treatment		
		Albumin	Sugar	Deposits		Albumin	Sugar	Deposits		Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
				Pus Cells	Epi. cells			Pus cells	Epi. cells						
1.	2405	NIL	NIL	2-4	3-5	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
2.	2455	NIL	NIL	1-2	0-2	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
3.	2332	NIL	NIL	2-4	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
4.	2794	NIL	NIL	3-5	2-4	NIL	NIL	1-4	1-2	NIL	NIL	NIL	NIL	NIL	NIL
5.	2965	NIL	NIL	1-2	2-3	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
6.	3263	NIL	NIL	2-3	4-5	NIL	NIL	1-2	0-3	NIL	NIL	NIL	NIL	NIL	NIL
7.	3103	NIL	NIL	1-2	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
8.	3461	NIL	NIL	1-2	2-4	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
9.	3432	NIL	NIL	2-3	1-3	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
10.	3109	NIL	NIL	1-2	1-3	NIL	NIL	0-1	1-2	NIL	NIL	NIL	NIL	NIL	NIL
11.	3660	NIL	NIL	1-3	1-2	NIL	NIL	0-1	1-2	NIL	NIL	NIL	NIL	NIL	NIL
12.	3755	NIL	NIL	1-2	0-2	NIL	NIL	1-3	1-3	NIL	NIL	NIL	NIL	NIL	NIL
13.	3105	NIL	NIL	1-3	0-1	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
14.	4008	NIL	NIL	2-4	1-2	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
15.	3960	NIL	NIL	1-2	0-1	NIL	NIL	2-3	1-3	NIL	NIL	NIL	NIL	NIL	NIL
16.	4042	NIL	NIL	1-2	2-3	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
17.	4004	NIL	NIL	2-3	1-2	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
18.	3961	NIL	NIL	1-2	2-3	NIL	NIL	0-1	1-2	NIL	NIL	NIL	NIL	NIL	NIL
19.	4185	NIL	NIL	1-2	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
20.	3820	NIL	NIL	0-1	1-2	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL

URINE AND MOTIONS EXAMINATION BEFORE AND AFTER TREATMENT – OP & IP PATIENTS

S. NO	OP NO	URINE								MOTION					
		Before Treatment				After Treatment				Before Treatment			After Treatment		
		Albumin	Sugar	Deposits		Albumin	Sugar	Deposits		Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
				Pus Cells	Epi. cells			Pus cells	Epi. cells						
21.	65682	NIL	NIL	1-2	2-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
22.	59255	NIL	NIL	2-3	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
23.	65412	NIL	NIL	2-4	1-2	NIL	NIL	2-4	1-2	NIL	NIL	NIL	NIL	NIL	NIL
24.	58746	NIL	NIL	2-3	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
25.	78554	NIL	NIL	4-5	2-3	NIL	NIL	2-3	1-2	NIL	NIL	NIL	NIL	NIL	NIL
26.	57823	NIL	NIL	2-4	1-2	NIL	NIL	1-2	0-2	NIL	NIL	NIL	NIL	NIL	NIL
27.	73154	NIL	NIL	1-2	1-2	NIL	NIL	0-1	0-1	NIL	NIL	NIL	NIL	NIL	NIL
28.	68070	NIL	NIL	2-3	1-4	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
29.	66916	NIL	NIL	2-4	4-5	NIL	NIL	2-3	1-2	NIL	NIL	NIL	NIL	NIL	NIL
30.	68415	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
31.	67975	NIL	NIL	3-5	2-4	NIL	NIL	2-3	1-2	NIL	NIL	NIL	NIL	NIL	NIL
32.	74470	NIL	NIL	1-3	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
33.	55530	NIL	NIL	1-2	1-3	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
34.	54678	NIL	NIL	2-4	1-3	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
35.	58435	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
36.	56197	NIL	NIL	4-5	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
37.	69330	NIL	NIL	1-2	1-2	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
38.	71707	NIL	NIL	2-4	4-5	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL
39.	82518	NIL	NIL	2-3	2-4	NIL	NIL	1-2	0-1	NIL	NIL	NIL	NIL	NIL	NIL
40.	88896	NIL	NIL	2-4	2-3	NIL	NIL	1-2	1-2	NIL	NIL	NIL	NIL	NIL	NIL

Bone mass density

S.No	Patient Name	Age/Sex	OP& IP No	Result
1	Servarayan	55/M	68070	4.3
2	Rajan	66/M	57823	2.0
3	Mary	60/F	56197	1.8
4	Jansy rani	58/F	54678	1.5
5	Senthi arumugam	59/F	69330	1.8
6	Gowri	52/F	71707	2.6
7	Maryammal	55/F	3109	2.7
8	Ponnuthai	45/F	3103	1.3
9	Ramalakshmi	60/F	2965	2.6
10	Thangakani	70/F	3432	2.5

DISCUSSION

Osteoarthritis is a chronic degenerative disorder of multifactorial etiology characterized by loss of articular cartilage, hypertrophy of bone at the margins, etc., with the biochemical and morphological alterations of the synovial membrane and the joint capsule. Knee pain is most frequent and symptomatic medical problems above 40 years people. More than 45years people report joint symptoms.

The signs and symptoms of Azhal keel vayu described in Siddha literature can be correlated with "Osteoarthritis of knee" in modern medicine 40 cases were selected and the diagnosis was made with the help of siddha method along with modern methods. The various criteria and the results were discussed here under.

Age distribution:

According to this study, most of the patients were above the age of 50 which was already explained by modern science that degeneration due to ageing is important cause for osteoarthritis.

Sex Distribution:

Among the 40 cases, 18 (45%) were male and 22 (55%) were female patients.

Prevalence of affecting the joints:

In **Azhal Keel Vayu** the hallmark of involvements are articular joints, perdominantly **Knee Joint (100%).**

Duration of the illness:

According to this study the duration of the illness varied from 10 days to 5 years.

Socio – economic status:

Among the 40 cases selected for this study, 31 cases (77.5%) were poor class, 7 cases (17.5%) middle class and only 2 cases (5%) were from rich background.

Occupation status:

Occupation place the important role in the aetiology of **Azhal Keel Vayu.** Manual labour account for 37.5% cases. Agricultural labour 35% and home workers 27.5% were also affected by the diseases. The main cause for this is excessive repetitive joint loading.

Precipitating Factors:

Ageing is the common cause for **Azhal Keel Vayu**. Apart from that over use of joints due to their occupation in (57.5%) over weight in (12.5%) of cases.

Clinical Manifestation:

The major clinical symptom reported to be pain in the joints and tenderness along joint line and crepitation (100%) in the knee joints followed by 50% of them had constipation 37.5% of them had morning stiffness 95% had limited duration of movements and 72.5% had swelling in knee joint.

Paruva Kaalam:

Kaar Kalam (47.5%), Koothir Kalam as (27.5%), Muthuvenil kalam (25%)

Thinnai:

The incidence of Azhal Keelvayu is high in people from Marutha Nilam (75%) Neithal Nilam (22.5%) and kurinji Nilam (2.5%).

Generally in marutha nilam, all the three doshas are in physiological ratio, but for these 40 patients the **occupation, age and Pollution** alters the physiological ratio and cause the disease.

Diet:

Diet plays a major role in maintaining ideal body mass index. Majority of the people (92.56%) were non-vegetarian diet habits.

Clinical features

From the tabulated data, it was clear that all the patients had pain, tenderness, crepitations as their predominating symptoms. Limited movements (95%), swelling (72.5%) and morning stiffness (37.5) were found to be predominent next to the above symptoms.

Radiological findings

From the table data, joint space narrowing (95%), presence of osteophytes (75%), Subchondral sclerosis (95%) are their predominating findings.

Disturbance in Vatham:

In the 40 cases, in all of them (100%) Viyanan and Samanan were affected. Abanan was affected in 35 (87.5%) cases

Disturbance in Pitham:

According to this study, Sathagapitham was affected in all 40 cases 100%.

Disturbance in Kapham:

According to this study santhiga kapham was affected in all the cases (100%). Therefore Avalambagam also affected in 40 cases (100%). Kilethagam was affected in 10(25%) cases.

Udal Kattugal:

Among the Seven Udal Kattugal, Saaram, Kozhuppu, Enbu and Moolai were affected in all 40 (100%) cases. Senneer was affected in 12 (30%). Oon was affected in 3 cases (7.5%).

Derangement in eight parameters of our systems (Envagi thervugal):

Sparisam (swelling, warmth and crepitation) was found affected in all the 40 cases.

In naadi pitha vatha naadi (50%) and vatha pitha naadi (37.5%) predominates among the other naadi in the osteoarthritis patients.

Treatment:

The treatment of Siddha system primarily aimed to retain the deranged thosams and then providing relief from symptoms.

Each patient was advised for purgation by giving vellai ennai – 15ml with warm water early morning (single dose for first day treatment)

From 2nd day onwards Internal medicine – sagala vatha choornam – 1.5gm three times/ day.

External medicine – Ilagu vadha Kesari thylam were given .

During treatment, the patient were advised particularly to avoid foods which increases vatham like potato, tuber and other roots and also advised

to take vitamin C containing foods and fruits. It is important in the development of normal cartilage.

Out of 40 cases 10 cases were given only external therapy like ottradam, thokkanam, varmam, leaf kattu and asana.

The result is mainly assessed by reduction in severity of joint pain, stiffness and improvement of restricted movements. Universal pain assessment scale was used to infer proper outcomes.

The swelling of knee joint marked reducing in lemon ottradam and pain was reduced by Adathoda leaf kattu.

SUMMARY

The disease Azhal Keel vaayu was comparatively studied with the disease Osteoarthritis with reference to its etiology, pathogenesis and clinical features. **Sagalavatha Chooranam** as internal medicine and **Ilagu Vatha Kaesari Thylam** as external medicine was selected and a clinical trial in Govt. Siddha Medical College, Palayamkottai was conducted with these drugs. For this 40 cases were selected in which 20 were treated in OutPatient ward and remaining 20 in In Patient ward.

Pharmacological analysis of Sagalavatha Chooranam shows

- Analgesic action
- Moderate Acute anti inflammatory action

Pharmacological analysis of Ilagu vadha kesari thylam shows

- Significant acute anti inflammatory action

Since external therapies or manual therapies like massage, fomentation, leaf bandage, exercises plays a significant role in treating Osteoarthritis. Some of the external therapies from siddha system are manipulated along with trial drugs depending upon the severity of the disease.

Daily progress was observed to evaluate the efficacy. The results obtained were found to be auspicious. Particularly results by external therapies were found to be very auspicious.

During and after the course of treatment no side effects were reported.

CONCLUSION

In this clinical study **SAGALA VADHA CHOORANAM ILAGAU VADHA KESARI THYLAM** were taken as Internal and External drug respectively for treating the disease Azhal Keel Vayu.

In the pre clinical study pharmacological evaluation of the trial drug shows

→ Significant analgesic effect

→ Moderate Acute Anti Inflammatory effect (Internal medicine)

→ Significant Acute Anti- Inflammatory effect (External medicine)

The overall results of efficacy of the trial drugs along with external therapies by reducing the clinical signs and symptoms like pain, swelling, morning stiffness. This Clinical study were found to have marked effect in 37.5% cases, moderate effect in 42.5% cases, mild effect in 12.5% cases and no effect in 7.5%.

So the clinical effect of the trial drugs along with external therapies was found to be moderater in treating the disease azhal keel vayu.

The Trial drug **Sagala Vadha Chooranam** and **Ilagu Vadha Kesari Thylam** is purely herbal. No adverse effects were noticed during the treatment period. So the trial medicine is safe and easily preparable medicine.

ANNEXURE - I

STANDARD OPERATING PROCEDURE FOR PREPARATION OF SAGALA VADHA CHOORANAM (Internal) AND ILAGU VADHA KESARI THYLAM (External)

SOURCE OF RAW DRUGS:

The required drugs for preparation of **SAGALA VADHA CHOORANAM** (Internal) and **ILAGU VADHA KESARI THYLAM** (External) are purchased from a well reputed country shop and Raw drugs are Authenticated by Medical botanist of Govt. Siddha Medical College, Palayamkottai, then purified and the medicines are prepared in the Gunapadam laboratory of Govt. Siddha Medical College, Palayamkottai.

PREPARATION AND PROPERTIES OF TRIAL DRUG

Name of the medicine: **SAGALA VADHA CHOORANAM**

Reference : **Athma Rakhsharmithamennum Vaidhya Sara Sankiragam**

INGREDIENTS OF TRIAL DRUG:

Cithira moola verpattai (Plumbago zeylanica)	- 175 gms
Melakaranai verpattai (Toddalia asiatica)	- 175 gms
Nochi Verpattai (Vitex negundo)	- 175gms

PURIFICATION:

Chithira moola verpattai:

The root bark of plumbago zeylanica is powdered and its steamed with milk.

Other milakaranai and nochi verpattai are cleaned with water and allowed to dry.

Method of preparations:

The all ingredients are powdered, mixed together and taken.

Dose : 1.5gms (Thirikadi piramanam) given with water

Indication : All types of vatha disease

2. Name of the medicine : ILAGU VADHA KESARI THYLAM

Reference : **Anubava vaidhya deva ragasiyam**

INGREDIENTS OF TRIAL DRUG:

Sesamum oil (Juice of cleome viscosa)	-	350ml
Poondu (Allium Sativa)	-	100gms
Perungayam (Ferula asafoetida)	-	17gms
Moosambaram (Aloe barbedensis)	-	17gms

METHOD OF PREPARTION:

Perungayam and moosambaram are powdered. Then vellai poondu is added and mixed into a paste. The paste is then taken in a vessel along with herbal juices and oil and heated until contents become wax like consistency. It is filtered and used for external application.

Dose : 30 ml

Indication : Kai, kaal kudaichal, Vali, Veekam, Keel Vayu, Mega Soolai.

PROPERTIES OF TRIAL DRUG : (INTERNAL)

கொடிவேலி:

Botanical name	:	Plumbago zeylanica
Family	:	Plumbaginaceae
Parts used	:	Root bark
வேறுபெயர்கள்	:	அணிஞ்சில், அதிகநாரி, அழல், உதாணன், எரி, எழுநா, ஒலி, கருநாகம், கனலி, காரிமை, கொடுவேலி, நானிலிந்திரன், கானிலம், சித்திரமூலி, தழல், உன்னி, அக்னி, கொடி வன்னி
சுவை	:	கார்ப்பு, விறுவிறுப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
வளரியல்பு	:	இந்தியாவில் எங்கும் கிடைக்கக்கூடியது. பெரும்பாலும் இது வேலிகளிலும் புதர்களிலும் பயிராகும்
செய்கை	:	முறைவெப்பகற்றி (Anti-perdiodic) வியர்வையுண்டாக்கி (Diaphoretic)
சுத்திமுறை	:	வேர்பட்டையை பாலில் வேக வைத்து எடுத்துக் கொள்ள சுத்தி

பொதுகுணம்:

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிக்சூ லைவீக்கங் காழ்மூலம் முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்.

Constituents:

It contain anti -oxidative property

Zeylaedon, chitradon, plumbagin, amino acid

2. மிளகரணை:

Botanical Name	:	Toddalia asiatica
Family	:	Rutaceae
Parts used	:	Root bark
சுவை	:	துவர்ப்பு
தன்மை	:	தட்பம்
பிரிவு	:	கார்ப்பு
வளரியல்பு	:	இது ஒருவகைக் கொடி
செய்கை	:	உரமாக்கி (Tonic)
		வியர்வை பெருக்கி (Diaphoretic)
		முறைவெப்பகற்றி (Antiperiodic)

பொதுகுணம்:

ஐயம கற்றும் அசீரணவா தம்போக்குஞ்
செய்யபித்த சூலைகளைத் தீர்க்குங்காண - பையவரும்
ஈளை இருமல் இரைப்புப்பு சந்தொலைக்கும்
நாளு மிளகரணை நன்று

பொருள் :

இது ஐயம், ஐயப்பெருக்கு, அசீரணம், வாதம், அழல் சூலை, இருமல், இளைப்பு, வயிற்றுப்பாரம், ஆகிய இவைகளை நீக்கும்.

Constituents:

Chelerythin, Oxyclerthin, Toddanin, Coumarin, Cyclohexylamine

Root bark contain a resin, essential oil, citri acid, pectin, starch, chief constituent is berberine.

3. நொச்சி

Botanical Name	:	Vitex negundo
Family	:	Verbenaceae
Parts used	:	Rootbark
வேறு பெயர்கள்	:	இந்திர சூரியம், நித்தில், நீர்க்குன்டி, நெர்க்குண்டி, சிந்தும சிந்துவாரம்
சுவை	:	கைப்பு, துவர்ப்பு, கார்ப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
வளரியல்பு	:	இந்தியா முழுவதும் வளருகின்ற ஒரு சிறய மரம்.
செய்கை	:	வெப்பகற்றி (Febrifuge) சிறுநீர்பெருக்கி (Diuretic)

பொதுகுணம்:

.... கர நொச்சிற் பட்டையது
துள்ளுசன்னி வாத மகற்றும்

பொருள்:

இதனால் முப்பிணியும். வாதநோயும் குணமாகும்.

சிறப்பு:

நோயா கலியை நொடிக்கு னருந்த வெம்மை
யோயோ மணர்ளு முயர்த்துவைக் - காய
வந்தமுதல் நண்பாகி வாதத்தை - யேயுவொற்
சிந்துவா ரங்கனலுந் தீ

பொருள் :

உடலின் வெம்மையை போக்கி நாளுக்கு நாள் உடன் வன்மையைப் பெருக்கி, வளிக்குற்றத்தைத் தன்னிலையில் நிற்கச் செய்யும்.

Constituents:

Major - Negundoside, Nishindaside

Other - Viridiflorol, p – eudesmol, methyl heptanone, carophyllene, linatool, camphor geranoil

Pharmacology – vitex negudo extract showed anti-inflammatory activity and is used in arthritis and Rheumatic disorder.

It also showed analgesic and central nervous system depressant activity

Major therapeutic claims : Anti inflammatory , Antifertility, Antispasmodic, Anti bacterial, Analgesic, Hepato protective, Anti convulsant.

Very efficacious in dispelling inflammatory swelling of the joints.

Indian Medicinal plants Vol – 3

Properties of Trial drug : (External)

1. நல்வேளை

Botanical name	:	Cleome viscosa
Family	:	Capparidaceae
Parts used	:	Whole plant
சுவை	:	கார்ப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
வளரியல்பு	:	எங்கும் கிடைக்கும் சிறு பூண்டு.
செய்கை	:	புழுக்கொல்லி (Anthelmintic)
		இசிவகற்றி (Antispasmodic)
		வியர்வைபெருக்கி (Diaphoretic)

பொதுகுணம்:

நல்லவே ளைப்பூண்டை நாடுங்கால் வாதமும்போம்
சொல்லுமை யத்துடனே சோபையறும், மெல்லமெல்ல
தக்க வன செம்பித்துந் தானெழும்புஞ் சாந்தமின்றி
அக்கரநோய் மிஞ்சு மறி

Constituents : Cleomiscosin D, Coumarino - Lingam, Glucosinolates, Cleomeolide

Action : Anti-Inflammatory, Anti-oxidative

2. பூண்டு:

Botanical Name	:	Allium sativum
Family	:	Liliaceae
Parts used	:	Tuber
வேறுபெயர்	:	இலசுனம், காயம், வெள்ளைபூண்டு
சுவை	:	கார்ப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
வளரியல்பு	:	எல்லா பாகங்களிலும் பயிராகும் ஒருவகை பூண்டு
செய்கை	:	அகட்டுவாய்வகற்றி (Carminative) உரமாக்கி (Tonic)

பொதுகுணம்:

சன்னியொடு வாதந் தலைநோவு தான்வலி
மன்னிவரு நீர்க்கோவை வன்சீதம் - அன்னமே
உள்ளுள்ளி கண்பாய் உளைமூல ரோகமும் போம்
வெள்ளுள்ளி தன்னால் வெருண்டு

Constituents :

Allicin, spirostanol, Analogue, Quarcitin, mysicetin, luliolin.

It act as a good antispasmodic. Externally the juice used as a rubefacient acts very beneficial spasmodic affections & arthritis.

3. பெருங்காயம்:

Botanical Name	:	Ferula asafoetida
Family	:	Umbelliferae
Parts used	:	Oleogum resin
வேறுபெயர்	:	இரணம், கந்தி, சந்துநாசம்.
சுவை	:	கைப்பு, கரகரப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
செய்கை	:	வெப்பமுண்டாக்கி (Stimulant) இசிவகற்றி (Antispasmodic)

பொதுகுணம்:

தந்தவே தந்த மூலத்தெழும்பிணி
சருவகாளம் விருச்சிகங்கீடம்மா
மந்தம்வாதம் உதாவர்த்தம் அல்கல்நோய்
மார்பணங்கட்ட குன்மம்மகோதரம்
உந்துகெர்ப்பத்தின் வித்திரஞ்சூலைச்சூர்
உதிரப்பூச்சி சிலேத்துமத்துறும் வலி
வந்தமெய்க்கடுப் போடிவைமுற்றுமே
மாயுநாறுநற் காயங்கிடைக்கினே

Constiuents :

Presence of sulphur compounds like disulfides, Glucosonic acid, galactose, Grahenoise, umbelliferone, Coumarine, Foelidin.

4. மூசாம்பரம்:

Botanical Name	:	Aloe littoralis
Family	:	Liliaceae
Parts used	:	Latex
சுவை	:	கைப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
செய்கை	:	உரமாக்கி (Tonic)
		வெப்பமுண்டாக்கி (Stimulant)

பொதுகுணம்:

மார்புவலி வீக்கம் வயிற்றுவலி பக்கநோய்
வார்மேகக் கட்டியொடு மாவாதம் - பாருலகில்
நீளங்கை காளல் நிலைசூலை யுங் கறுதத
போளந் தனைக்காணிற் போம்.

Constituents:

Used in areas around joint information and swelling.

It inhibits production of Inflammatory prostaglandins.

5. நல்லெண்ணெய்:

Botanical Name	:	Sesamum indicum
Family	:	Pedaliaceae
Parts used	:	Seed
செய்கை	:	உள்ளழலாற்றி (Demulcent)
		உடலுரமாக்கி (Nutritive)
		வறட்சியகற்றி (Emulcient)

பொதுகுணம்:

புத்திநயனக்குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சத்துவங் கந்தி தனியிளமை - மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநோய்
புண்ணோய் போமெண்ணெய்யாற் போற்று.

Chemical Constituents:

Seeds contain Fixed oil, Protein, Carbohydrate

ANNEXURE - II

GOVT SIDDHA MEDICAL COLLEGE- PALAYAMKOTTAI

BIO – CHEMICAL ANALYSIS OF SAGALA VATHA CHOORANAM

PREPARATION OF THE EXTRACT:

5gms of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml of distilled water added to it and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it is made up to 100ml with distilled water. This fluid was taken for analysis.

Qualitative Analysis

S.No.	Experiment	Observation	Inference
1.	**Test for calcium** 2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution.	No white precipitate is formed.	**Absence of** calcium.
2.	**Test for sulphate:** 2ml of the extract is added to 5% barium chloride solution.	A white precipitate is formed.	Indicates the **presence** of sulphate.
3.	**Test for chloride** The extract is treated with silver nitrate solution.	A white precipitate is formed.	Indicates the **presence** of chloride.

4.	**Test for carbonate** The substance is treated with concentrated HCl.	No brisk effervescence is formed.	**Absence** of carbonate.
5.	**Test for Starch** The extract is added with potassium ferro cyanide.	Blue colour is formed	Indicates the **presence** of Starch
6.	**Test for iron Ferric** The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide.	No blue colour is formed.	**Absence** of ferric iron.
7.	**Test for iron Ferrous:** The extract is treated with concentrated nitric acid and ammonium thio cyanate.	Blood red colour is formed.	Indicates the **presence of** ferrous iron.
8.	**Test for phosphate** The extract is treated with ammonium molybdate and concentrated nitric acid.	Yellow precipitate is formed.	Indicates **trace amount of** phosphate is present
9.	**Test for albumin** The extract is treated with Esbach's reagent.	No yellow precipitate is formed.	**Absence** of Albumin.
10.	**Test for Tannic acid** The extract is treated with ferric chloride reagent.	No Blue black precipitate is formed	**Absence** of Tannic acid

11.	**Test for unsaturation** Potassium permanganate solution is added to the extract.	It gets decolorized.	Indicates the **presence of** unsaturated compound.
12.	**Test for the reducing sugar** 5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	No Colour change occurs.	**Absence** of reducing sugar
13.	**Test for amino acid:** One or two drops of the extract are placed on a filter paper and dried it well. After drying, 1% ninhydrin is sprayed over the same and dried it well.	Violet colour is formed.	Indicates the **presence of** Amino acid.
14.	**Test for zinc:** The extract is treated with potassium ferrocyanide	No white precipitated is formed	**Absence** of zinc

Result:

The trial drug **SAGALA VATHA CHOORANAM contains**

1. Sulphate
2. Chloride
3. Starch
4. Ferrous iron
5. Phosphate
6. Unsaturated compound
7. Amino acid

ANNEXURE – III

GOVT SIDDHA MEDICAL COLLEGE- PALAYAMKOTTAI
PHARMACOLOGICAL ANALYSIS
ANALGESIC STUDY OF SAGALA VATHA CHOORANAM

Aim:

To study the analgesic effect on albino rats by tail flick method.

Preparation of the test Drug:

1 gram of **Sagala vatha chooranam** was suspended in 10ml of Hot Water as suspending agent. This 1 ml contained 100mg of the test drug.

Procedure:

Nine Male Healthy albino rats (weighing 80-100gms) were used for this study. The animals were allowed, free access to food and water until they brought for the experiment. The animals which showed the positive response to the stimulus (within a given time) were selected for the study. After the selection of animals which were responding to stimulus within 2 seconds, they were divided into three groups, each group consisting of three rats.

The hot water was maintained at 55°C. The tip of the tail was immersed into the water bath and the time was noted when the rat flicked the tail. First group was given 1ml of water and kept as control. Second group was administered with paracetamol at a dose of 20mg/100gm of body weight. Third group as given the dose of 100mg/100gm body weight of the animal .After the drug administration,

the reaction time of each rat after half an hour and one hour were noted in each group (when a rat fails to flick the tail, it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group, standard group and drug treated group were tabulated and compared.

STUDY OF ANALGESIC EFFECT USING THE DRUG SAGALA VATHA CHOORANAM

Name of the Groups	Dose/ 100 gram body weight	Initial reading	After drug administration		Mean difference
			½ hr Average	1 hr Average	
Control (Water)	2 ml	2.0 sec	2.0 sec	2.0 sec	2.0 sec
Standard (Paracetamol)	2 mg	2.5 sec	4.5 sec	6.5 sec	6.5 sec
Test drug (Sagala vatha chooranam)	100 mg	2.5 sec	4.0 sec	5.5 sec	5.5sec

Inference:

The trial drug had **significant analgesic action.**

STUDY OF ACUTE ANTI – INFLAMMATORY ACTIVITY IN RATS USING THE DRUG

SAGALA VATHA CHOORANAM

BY HIND – PAW METHOD

Aim:

To demonstrate the acute anti-inflammatory activity of Sagala vatha chooranam in albino rats by Hind-paw method.

Procedure:

Nine healthy albino rats weighing 100-150 gm were taken and divided into three groups, each consisting of three rats.

First group was kept as control by giving distilled water orally 2ml/100gm body weight. The second group was given ibuprofen at a dose of 20mg /100gm body weight. The third group received the test drug at a dose 100mg /100g body weight.

Before administration of test drug, the hind-paw volumes of all rats were measured. This was done by dipping the hind-paw upto the tibio-tarsal junction into a mercury plethysmograph. While dipping the hind-paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

Soon after measurement, the drugs were administered orally. One hour later, a sub-cutaneous injection of 0.1ml of 1% (W/V) Carrageenan in water was made into plantar surface of both hind-paws of each rat. Three hours after carrageenan injection, the hind paw volume was measured once again. The difference between the initial and final volume was calculated and compared. This method is more suitable for studying the anti-inflammatory activity in acute inflammation. The values are tabulated.

STUDY OF SAGALA VATHA CHOORANAM IN

ACUTE ANTI – INFLAMMATORY ACTIVITIES

Group	Dose volume orally	Initial reading	Final reading	Mean difference	Percentage Inflammation	Percentage Inhibition
Control	Water 2 ml	0.55	1.4	0.85	100	-
Standard	Ibuprofen 20mg	0.55	0.75	0.20	23.2	76.5
Test drug	100mg	0.5	0.85	0.35	41.1	58.9

Result:

The drug has **moderate acute anti-inflammatory action.**

ACUTE ANTI - INFLAMMATORY STUDY ON ILAGU VATHA KESARI THYLAM (EXTERNAL USE) BY HIND-PAW METHOD IN ALBINO RATS

Aim:

To study the acute anti-inflammatory activity of the test drug **ILAGU VATHA KESARI THYLAM**

Preparation of the test drug:

The **Ilagu vatha kesari thylam** was prepared as per the preparation given in Anubava vaidhya deva ragasiyam.

Procedure:

Nine healthy albino rats weighing 100-150gm were taken and divided into three groups, each consisting of 3 rats.

First group was kept as control by giving distilled water of 2ml/100gm of body weight. The second group was kept as test group. The third group was given the standard drug.

Before application of the test drug the Hind-paw volume of all the rats were measured. This was done by dipping the Hind-paw up to the tibio-femoral junction into a mercury plethysmograph. While dipping the Hind-paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

One hour later, a sub-cutaneous injection of 0.1ml of 1 %(w/r) Carrageenan water made into plantar surface of both Hind-paw of each rat. To the second (last) group **Ilagu vatha kesari thylam** was topically applied for three times over the inflammed surface in a thin layer for every 15mts for an hour.

To the contol group no drug was applied over the inflammed surface. To the standard group the standard drug Ibuprofen in a dose of 20mg/100gm body weight was given.

Three hour after injection the Hind-paw volume was measured once again. The difference between the initial and final volume would show the amount of inflammation. Taking the volume in the control group as 100% of inflammation, anti – inflammatory effect of the test group is calculated.

EFFECT OF ILAGU VATHA KESARI THYLAM

Group	Drugs	Dose 100 gm of body weight	Initial value	Final value	Difference	Percentage Inflammation	Percentage Inhibition
Control	Water	2ml	0.55	1.4	0.85	100	-
Standard	Ibuprofen	20mg	0.55	0.75	0.20	23.5	76.5
Test drug	IVKT	Ext	0.55	0.85	0.3	35.2	64.8

IVKT- ILAGU VATHA KESARI THYLAM

Inference: The test drug has Significant anti-inflammatory action externally.

ANNEXURE – IV

ASSESSMENT FORMS

FORM I - SCREENING FORM

FORM II - CONSENT FORM

FORM III - CASE PROFORMA

FORM IV - LABORATORY INVESTIGATIONS

FORM V - CLINICAL ASSESSMENT

FORM VI - PATIENT WITHDRAWAL FORM

FORM VII - DRUG COMPLIANCE FORM

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM I –SCREENING FORM

1. OP/ IP No: 2. BED No:

3. Sl. No: 4. NAME:

5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

I. INCLUSION CRITERIA:

1. Sex: Both Male and Female.
2. Pain and swelling present in knee joints.
3. Crepitations present in knee joints.
4. Early morning stiffness.
5. Tenderness

II. EXCLUSION CRITERIA:

1. Diabetes Mellitus
2. Hypertension
3. Cardiac diseases
4. Pregnancy and Lactation
5. Patients with any other serious illness
6. Peptic ulcer
7. Severe trauma
8. Any other systemic diseases

III. WITHDRAWAL CRITERIA:

1. Development of any adverse reaction (ADR
2. Occurrence of any other systemic illness.

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

Form: II CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all the details about the study in the terms readily understood by the patient.

Signature……. Date……
Name…….

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of 'SAGALA VATHA CHOORANAM (Internal drug & ILAGU VATHA KESARI THYLAM (External drug)' for the treatment of 'Azhal keel vaayu' (osteoarthritis).

Signature……. Date…….

Name……

அரசினர் சித்த மருத்துவக் கல்லூரி மற்றும் மருத்துவமனை,பாளையங்கோட்டை

பட்டமேற்படிப்பு சிறப்புமருத்துவத்துறை

"சகலவாத சூரணம்" மற்றும் "இலகு வாத கேசரி தைலம்" இவற்றின்

பரிகரிப்புத்திறனைக் கண்டறியும் மருத்துவ ஆய்வு

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறையைப் பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வு செய்யும் உரிமையைக் கொண்டு அழல் கீல் வாயு என்னும் நோய்க்கான "சகல வாத சூரணம் " மற்றும் " இலகு வாத கேசரி தைலம் " ஆகியவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி:	கையொப்பம்:
இடம்:	பெயர்:
தேதி:	சாட்சிக்காரர் கையொப்பம்:
இடம்:	பெயர்

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM III – CASE PROFORMA

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

---

12. COMPLAINTS & DURATION:

13. HISTORY OF PRESENT ILLNESS:

14. PAST HISTORY:

15. FAMILY HISTORY:

16. MENSTRUAL HISTORY (If applicable):

17. HABITS:

	Yes	No
1. Smoker	☐	☐
2. Alcoholic	☐	☐
3. Betel nut chewer	☐	☐
4. Non-Veg /Vegetarian	☐	☐
5. Drug addiction	☐	☐

18. GENERAL EXAMINATION:

1. Body weight [Kg] :
2. Height [cm] :
3. Body Temperature [^{o}F] :
4. Blood Pressure (mmHg) :
5. Pulse Rate /min. :
6. Heart Rate /min. :
7. Respiratory Rate /min. :

		Yes	No
8. Pallor	:	☐	☐
9. Jaundice	:	☐	☐
10. Clubbing	:	☐	☐
11. Cyanosis	:	☐	☐
12. Pedal Oedema	:	☐	☐

13. Lymphadenopathy : ☐ ☐

14. Jugular venous pulsation: ☐ ☐

19. CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION	**Present**	**Absent**	
1. Swelling	☐	☐	……
2. Muscle wasting	☐	☐	……
3. Deformity	☐	☐	……

II. PALPATION:	**Present**	**Absent**	
1. Tenderness	☐	☐	……..
2. Swelling	☐	☐	……
3. Crepitations	☐	☐	……
4. Warmth	☐	☐	……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full ☐ Partial ☐ No ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	No	Yes	No	Normal	Reduced
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation	Normal	☐	Abnormal	☐
ii. Tone	Normal	☐	Abnormal	☐
iii. Power	Normal	☐	Abnormal	☐
iv.Muscle wasting	Present	☐	Absent	☐

4. REFLEXES:	**Normal**	**Exaggerated**
i. Knee jerk	☐	☐
ii. Ankle jerk	☐	☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints: No ☐ Mild ☐ Moderate ☐ Severe ☐

i. Onset Sudden ☐ Gradual ☐

ii. Nature: Local ☐ Diffuse ☐ Others ☐

B. Nature of pain Shooting ☐ Burning ☐ Others ☐

	YES	***NO***
C. Pain during movements	☐	☐
II. Morning stiffness	☐	☐
III.Tenderness	☐	☐
III. Swelling	☐	☐
IV. Restricted joint movements	☐	☐

21. EXAMINATION OF OTHER SYSTEMS:

	Normal	Abnormal
1. CVS	☐	☐
2. RS	☐	☐
3. CNS	☐	☐
4. ABDOMEN	☐	☐
5. GENITO-URINARY	☐	☐

SIDDHA ASPECTS

1. NILAM:

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4. Neithal ☐ 5. Paalai ☐

2 . KAALAM:

1. Kaar Kaalam ☐ 2. Koothir Kaalam ☐ 3. Munpani Kaalam ☐

4. Pinpani Kaalam ☐ 5. Ilavenir Kaalam ☐ 6. Muduvenir Kaalam ☐

3. YAAKKAI:

1. Vatham ☐ 2. Pitham ☐ 3. Kabam ☐

4. Vathapitham ☐ 5. Pithavatham ☐ 6. Kabavatham ☐

7. Vathakabam ☐ 8. Pithakabam ☐ 9. Kabapitham ☐

4. GUNAM:

1. Sathuvam ☐ 2. Rasatham ☐ 3. Thamasam ☐

5. IYMPORIGAL: Normal Affected

1. Mei ☐ ☐ ……..

2. Vaai ☐ ☐ ……..

3. Kan ☐ ☐ ……

4. Mookku ☐ ☐ ……

5. Sevi ☐ ☐ ……

6. KANMENDHIRIUM / KANMAVIDAYAM:

Normal Affected

1. Kai ☐ ☐ ……...

2. Kaal ☐ ☐ ……...

3. Vaai ☐ ☐ ……..

4. Eruvaai ☐ ☐ ……..

5. Karuvaai ☐ ☐ ……..

7. UYIR THATHUKKAL:

I. VATHAM: **Normal** **Affected**

1. Piraanan ☐ ☐ ……

2. Abaanan ☐ ☐ ……..

3. Viyaanan ☐ ☐ ……..

4. Uthaanan ☐ ☐ ……

5. Samaanan ☐ ☐ ……

6. Naagan ☐ ☐ ……..

7. Koorman ☐ ☐ ……...

8. Kirukaran ☐ ☐ ……..

9. Devathathan ☐ ☐ ……

10. Dhananjeyan ☐ ☐ ……

II. PITHAM : **Normal** **Affected**

1. Analam ☐ ☐ …….

2. Ranjagam ☐ ☐ …….

3. Saathagam ☐ ☐ ……..

4. Aalosagam ☐ ☐ …….

5. Prasagam ☐ ☐ ……..

III. KABAM: **Normal** **Affected**

1. Avalambagam ☐ ☐ ……

2. Kilethagam ☐ ☐ ……

3. Pothagam ☐ ☐ ……

4. Tharpagam ☐ ☐ ……..

5. Santhigam ☐ ☐ ……

8. UDAL THATHUKKAL: Normal Affected

1. Saaram ☐ ☐ ……
2. Senneer ☐ ☐ ……
3. Oon ☐ ☐ …….
4. Kozhuppu ☐ ☐ …….
5. Enbu ☐ ☐ …….
6. Moolai ☐ ☐ ……
7. Sukkilam/Suronitham ☐ ☐ …….

9. ENVAGAI THERVUGAL:

1 **. Naadi** ……

	Normal	**Affected**	
2. **Sparisam**	☐	☐	……..
3. **Naa**	☐	☐	……
4. **Niram**	☐	☐	……..
5. **Mozhi**	☐	☐	……..

6. **Vizhi** ☐ ☐ ……..

7. **Malam**

a. Niram ☐ ☐ ……..

b. Nurai ☐ ☐ ……..

c. Kirumi ☐ ☐ ……..

d. Thanmai: i. Irugal ☐ ii. Ilagal ☐

8. Moothiram:

I. NEERKKURI Normal Affected

a. Niram ☐ ☐ ……..

b . Manam ☐ ☐ ……..

c. Edai ☐ ☐ ……..

d. Nurai ☐ ☐ ……..

e. Enjal ☐ ☐ ……..

II. NEIKKURI: …….

Vatha Neer ☐ Pitha Neer ☐ Kaba Neer ☐

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

Form IV - LABORATORY INVESTIGATIONS

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ENROLMENT: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

Date:

I. BLOOD:

1. TC : (Cells/Cumm)
2. DC (%): N L M E
3. ESR (mm) : ½ hr 1 hr
4. Hb:

5. Total RBC:
6. Blood Sugar: a) Fasting b) Post prandial
7. Kidney function tests:

   Blood urea: Serum creatinine:

8. Lipid profile:

   HDL: LDL: VLDL:

   Total Cholesterol : TGL:

9. Liver Function tests:

   SGOT: SGPT: Alk. Phosphatase:

   Albumin: Globulin: Total Protein:

   Serum Bilirubin: Total Direct Indirect :

II. URINE:

1. Albumin :
2. Sugar :
3. Epithelial cells :
4. Pus cells :
5. Red blood cells :
6. Casts/Crystals :

III. MOTION:

1. Ova :
2. Cyst :
3. Occult blood :
4. Pus cells :

IV. X-RAY:

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM V – CLINICAL ASSESSMENT

1. OP/ IP No: 2. BED No: 3. Sl. No:

4. NAME: 5. AGE: 6. GENDER:

7. OCCUPATION: 8. SOCIAL STATUS

9. DATE OF ADMISSION: 10. DATE OF DISCHARGE:

11. POSTAL ADDRESS:

Lecturer **HOD**

CLINICAL EXAMINATION OF KNEE JOINT:

I. INSPECTION:	**Present**	**Absent**	
1. Swelling	☐	☐	……
2. Muscle wasting	☐	☐	……
3. Deformity	☐	☐	……

II. PALPATION: **Present** **Absent**

1. Tenderness ☐ ☐ ……

2. Swelling ☐ ☐ ……

3. Crepitations ☐ ☐ ……

4. Warmth ☐ ☐ ……

III. MOVEMENTS:

1. Restriction of Movements in the Knee joint: Full Partial No

☐ ☐ ☐

2. KNEE: PAIN MUSCULAR SPASM ROM

	Yes	**No**	**Yes**	**No**	**Normal**	**Reduced**
i. Flexion	☐	☐	☐	☐	☐	☐
ii. Extension	☐	☐	☐	☐	☐	☐

3. NEUROLOGICAL EXAMINATION:

i. Sensation: Normal ☐ Abnormal ☐ ……...

ii. Tone Normal ☐ Abnormal ☐ ……..

iii. Power Normal ☐ Abnormal ☐ ..……

iv. Muscle wasting: Present ☐ Absent ☐ …….

4. REFLEXES: **Normal** **Exaggerated**

i. Knee jerk ☐ ☐

ii. Ankle jerk ☐ ☐

20. CLINICAL ASSESSMENT:

I. PAIN:

A. Pain in the knee joints: No ☐ Mild ☐ Moderate ☐ Severe ☐

i. Onset Sudden ☐ Gradual ☐

ii. Nature: Local ☐ Diffuse ☐ Others ☐

B. Nature of pain Shooting ☐ Burning ☐ Others ☐

	Yes	**No**
C. Pain during movements	☐	☐
II. Morning stiffness	☐	☐
III.Tenderness	☐	☐
III. Swelling	☐	☐
IV. Restricted joint movements	☐	☐

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM - VI PATIENT WITHDRAWAL FORM

1. OP / IP No …… 2. S.No. …… 3.Date: ……

4. Name …….. 5. Age …… 6. Gender ……

7. Postal address:

Complaints and Duration:

Irregular treatment:

Other causes:

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SAGALA VATHA CHOORANAM & ILAGU VATHA KESARI THYLAM FOR AZHAL KEEL VAAYU (OSTEOARTHRITIS)

FORM VII - DRUG COMPLIANCE FORM

Name of the Drug: SAGALA VATHA CHOORANAM

Drugs issued: ……(mgs/Grams)

Drugs returned: ……(mgs/Grams)

S.NO	DATE	DRUG TAKEN TIME		
		MORNING/TIME	AFTERNOON/TIME	NIGHT/TIME
Day 1				
Day 2				
Day 3				
Day 4				
..				
..				
Up to day 48				

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

BIBLIOGRAPHY

📖 Agathiyar gunavagadam

📖 Bogar vaithiyam 700

📖 Toxicology and clinical pharmacology of herbal products

📖 Indian Medicinal Plants

📖 Principles and practices of Therapeutic massage

📖 Thanvanthiri vaithiyam

📖 Therayar Vagadam

📖 Human anatomy BD Chaurasia

📖 Robbin's and cotran pathologic Basis of Disease.

📖 Aathma Ratchamirtham Vaidhya Sara Sangkiragam

📖 Anubava vaidhya Deva Ragasiyam

📖 Mercer orthopaedic and surgery

📖 Davidson's principles and practice of medicine.

📖 External therapies of siddha medicine-Dr .T .Thirunarayanan & Dr. R. Sudha

📖 Graham Apley's system of orthopaedics and fractures

📖 Gunapadam Mooligai Vaguppu-Dr.C.S.Murugesa mudhaliyar

📖 Hutchinsons clinical methods

📖 Indian meteria medica vol i & ii-Dr.k.m.nadkarni

📖 Noi Naadal Noi Mudhal Naadal Thirattu-part 1 -Dr.P. Shanmugavelu.

📖 Orthopaedic and Traumatology – Natarajan

🕮 Orthopaedic and Traumatology- G.S.Kulkarni

🕮 Pararasasegaram.

🕮 Pathartha guna chinthamani.

🕮 Sabapathy kaiyedu

🕮 Siddha maruthuvam (podhu)-Dr. Kuppusamy mudaliyar, BIM.

🕮 Siddha Maruthuvam Sirappu-Dr. R.Thiyagarajan, BIM.

🕮 Siddha Maruthuvanka Churukkam- Dr.K.S. Uthamarayan, HPIM.

🕮 Siddha vaithiya thirattu

🕮 Siddhar aruvai maruthuvam-Dr.C.S.Uthamarayan.

🕮 T. V. Sambasivam Pillai Tamil English Dictionary.

🕮 Taxonomy of Angiosperms - Dr. S. Somasundaram, M.Sc., Ph.d.

🕮 Text book of Orthopedics 4th edition -John Ebnezar

🕮 Theraiyar vagadam.

🕮 Thirumoolanayanar seegicha rathnadeepam.

🕮 Thirumoolar thirumanthiram.

🕮 Thotra Kirama Araicheium Siddha Maruthuva Varalarum

🕮 Udal thathuvam.

🕮 Varma pulligalin irupidam-Dr. Kannan Rajaram, B.S.M.S.,

🕮 Yugi Vaithya Chinthamani 800.

SAGALAVADHA CHOORANAM – INTERNAL MEDICINE

கொடிவேலி வேர்

மிளகரணை வேர்

நொச்சி வேர்பட்டை

ILAGU VADHA KESARI THYLAM – EXTERNAL MEDICINE

நல்வேளை

பெருங்காயம்

மூசாம்பரம்

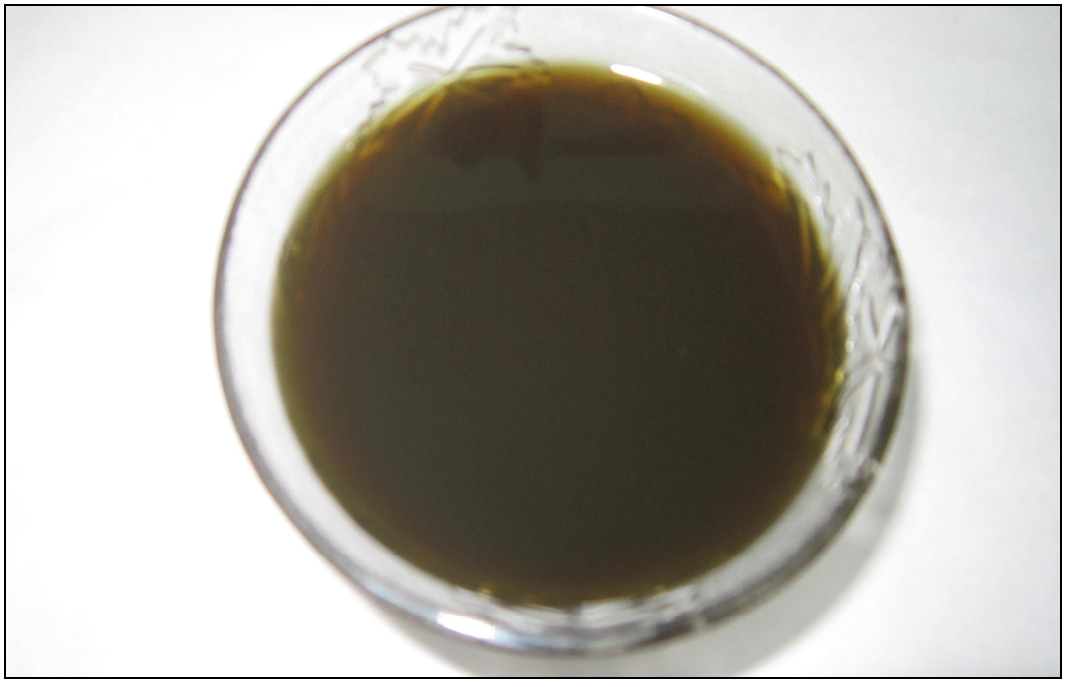
வெள்ளைப்பூண்டு

நல்லெண்ணெய்

உள் மருந்து

சகலவாத சூரணம்

வெளி மருந்து



இலகுவாத கேசரி தைலம்

ஒற்றடம் (Foementation)

எலுமிச்சம் பழம் ஒற்றடம்

இலைக் கிழி ஒற்றடம்

கட்டு (COMPRESS)

PATIENTS WITH SWELLING

I.P. No: 3109

Name : Mariammal Age : 55 Female

I.P. No: 3103

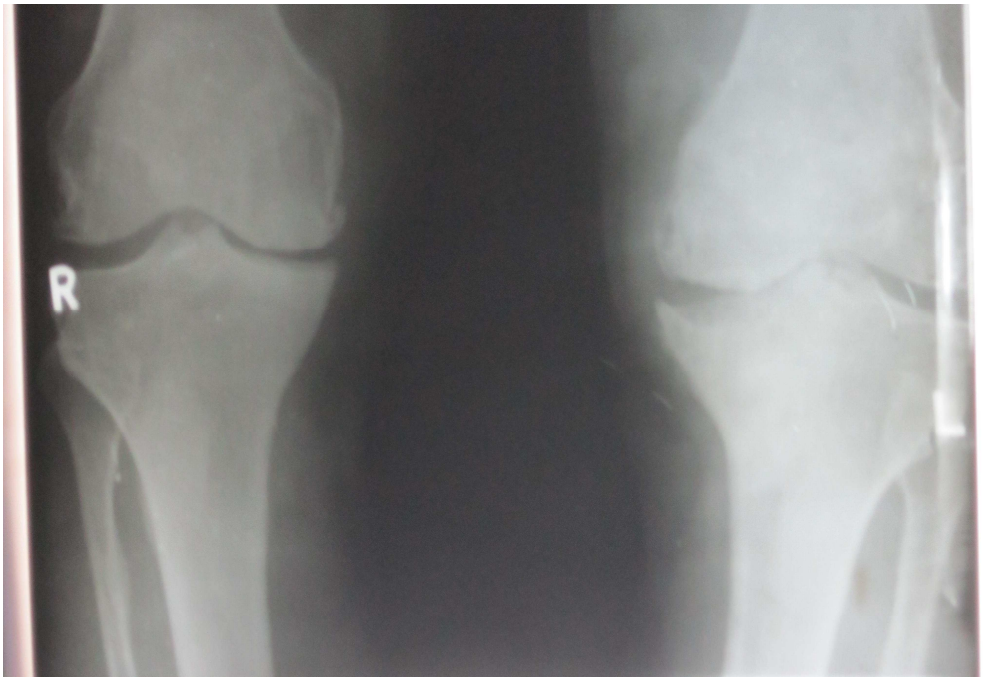
Name : Ponnuthai Age : 45 Female

O.P. No: 71707

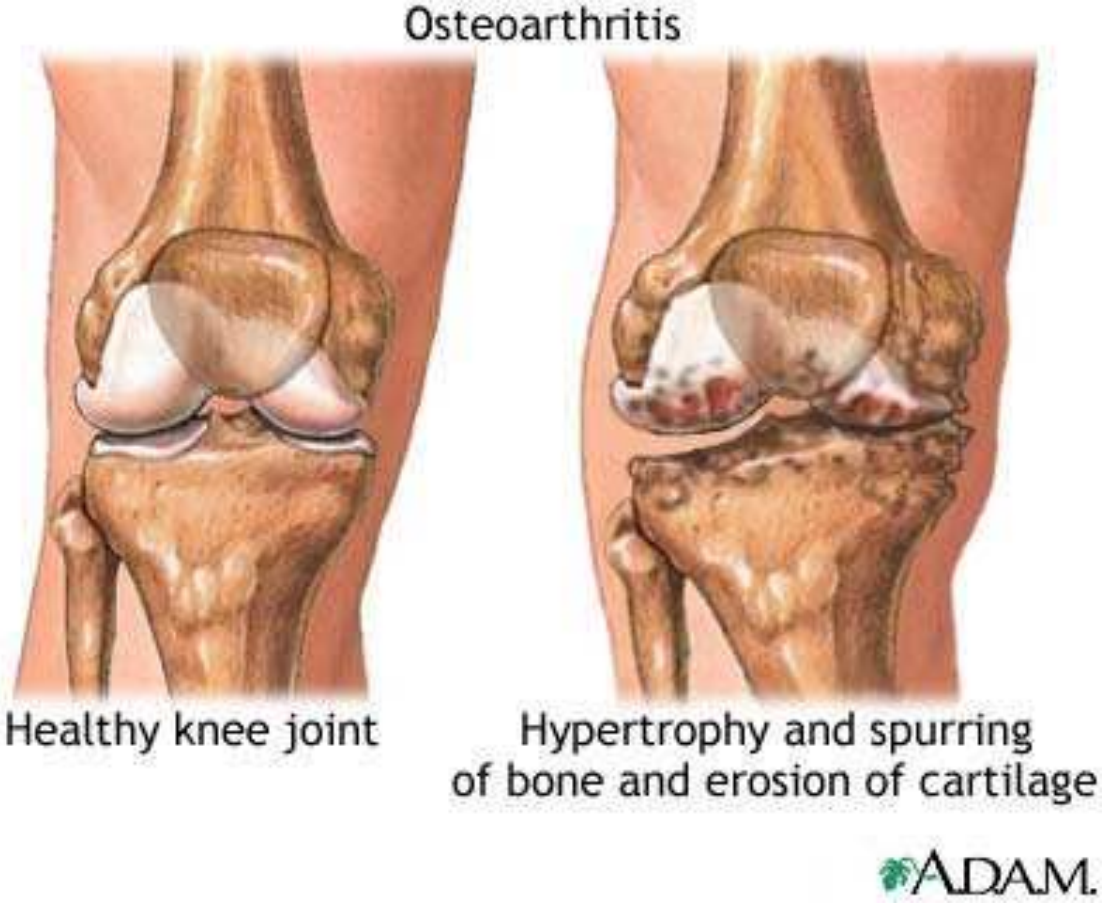
Name : Gowri Age : 52 Female

O.P. No: 69330

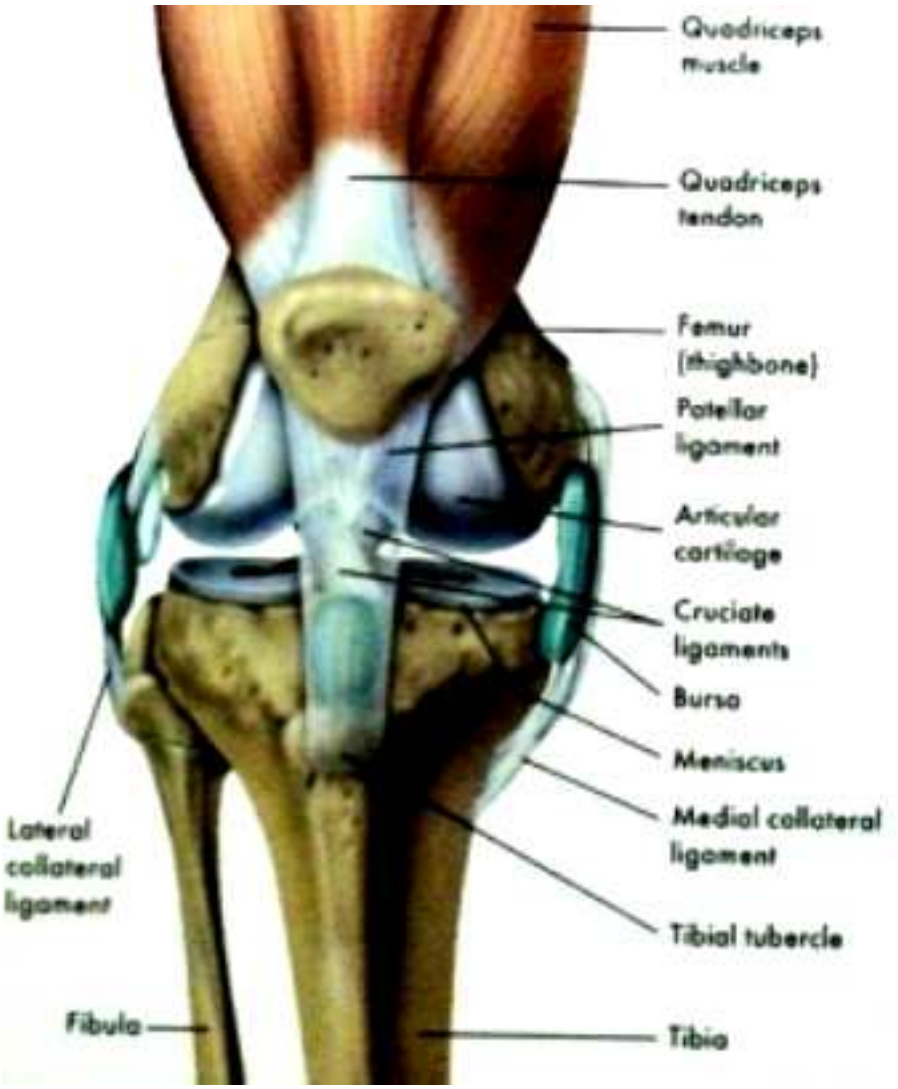
Name : Senthil Arumugam Age : 59 Female



OSTEOARTHRITIS KNEE



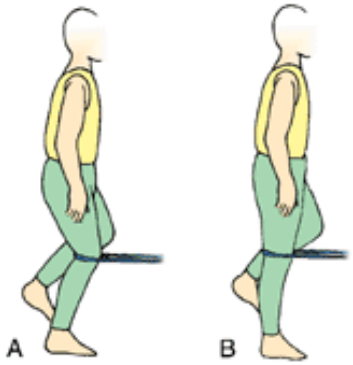
ANATOMY OF THE KNEE JOINT



EXERCISE FOR KNEE JOINT

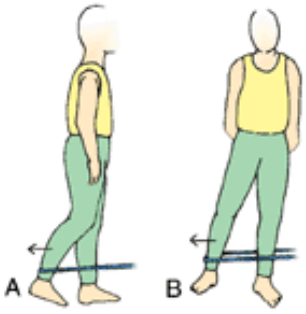
Standing hamstring stretch

Quadriceps stretch

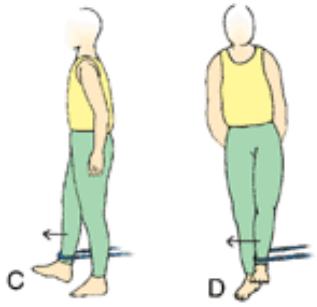


Resisted knee extension

Side-lying leg lift



Straight leg raise



Knee stabilization

Wall squat with a ball

Step-up

Quadriceps isometrics